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ORIGINAL ARTICLES.

QUININE IN DISEASES OF THE EAR.*

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THE consensus of opinion appears to be that quinine in large doses, will in cases in which there is hyperæmia of the ear, produce deafness by increasing the blood supply to the external, middle, and internal ear. Some years ago, while house surgeon of the Manhattan Eye and Ear Hospital of New York, Dr. Roosa was making his well-known experiments of the effect of quinine upon the ear. I saw one of these cases and there was marked hyperæmia. Dr. Roosa reports a case, page 171, of inflammation of the auditory canal caused by quinine. The man had also impacted wax of no telling how many years' standing. The wax in one canal was so hard, and the canal so sensitive, that it had to be removed by careful applications of nitric acid. Roosa, page 379, says: "The excessive use of quinine may also, in rare instances, cause incurable disease of the middle ear." On page 585 he cites cases of neuralgia of the ear cured by quinine; on the same page he says: "The diagnosis is of great importance, for one of the most valuable of remedies for neuralgia, quinine, is usually very harmful when administered in the course of catarrh or suppuration of the middle ear; indeed, in large doses it is also harmful in all the inflammations of various parts of the ear."

Roosa, however, says on page 641, that "It is well-known that buzzing in the ear is caused by quinine, that many persons who are becoming gradually deaf from chronic catarrhal or proliferous inflammations of the middle ear, and who, as is the case with most other persons in our country, have taken some quinine in their time, jump at the conclusion that the quinine caused the impairment of hearing from which they suffer. Exact examination often shows that many such patients have never taken quinine enough to cause, or even to cure any disease." It will be observed that Dr. Roosa makes himself easily understood on this subject, as he does on all others.

Pomeroy, page 315, says: "Inasmuch as quinine is administered largely for the treatment of malaria, and as the latter condition is known to act injuriously on the ears, it is somewhat difficult to arrive at an exact conclusion as to the effect of the drug on the organ of hearing." Page 318 he says: "The practical point regarding these mat-

ters seems to be to avoid quinine in cases when it is plainly obnoxious." Dr. Pomeroy, it will be observed, is non-committal.

Albert H. Buck, page 151, says: "Finally, in children the internal administration of quinine sometimes gives rise to an acute or sub-acute inflammation of the middle ear." I have seen several such cases: two of three he cites, three and five years of age, in which with each dose of quinine the membrani tympani became more and more red, until the ears became quite painful, for which hot applications had to be made to allay. Both these children, he said, however, had a tendency to naso-pharyngeal catarrh. He says: "Hence I am not prepared to say that, in a perfectly normal state of the tympanic and tubal mucous membrane, quinine is competent to excite an acute inflammation, but simply that in young children more particularly, this drug is capable of fanning a slight and perfectly painless tubal (and perhaps tympanic) catarrh into a fairly acute inflammation of the parts."

Toynbee, page 499, says: "Thus it is often said by patients that after somewhat large doses of quinine, they have suddenly been attacked by a violent singing in the ears, accompanied by considerable difficulty in hearing, an affection which generally—although not always—entirely disappeared after a while."

Burnett, page 568, in answer to the question: "Does quinine make one permanently deaf" says: "So far as I am able to give an answer, it is always in the negative." Page 569 he says: "But so far as my experience goes, all necessary doses of this useful drug can be given in any case with impunity, whether the ears are affected or not."

Dr. H. N. Spencer says he believes it possible that in some cases quinine may permanently injure the hearing, but he has seen no case where lasting injury has resulted from quinine alone, other explanations of the deafness always being found.

Roosa reports a case of typhoid fever, page 648, which was deaf from quinine, but which recovered her hearing; on the same page a Navy officer, who, after exposure to a severe storm, took 20 grains of quinine on retiring and woke up profoundly deaf; he ultimately recovered the hearing partially of one ear, but not the other.

Weber-Liel says quinine and salicylic acid both will produce deafness.

As to the pathology of quinine deafness—if there is such a thing—it is still in dispute. Roosa contends it is the result of hyperæmia. He says on pages 643 and 644—that Hammond and Von Graefe agree with him—"That the tinnitus aurium

* Abstract.

following the use of quinine is the result of over-filled blood vessels, and is not the anæmia of blood vessels not containing the normal quality or quantity of fluid." Weber-Liel verifies Roosa's views, quoted by Roosa from Brunner.

Kirchner says that "Quinine causes inflammatory processes and permanent pathological changes in the ear." He believes that the cause for these conditions is to be found not only in a hyperæmia of short duration, but also in paralysis of the vessels, with congestion and exudation.

Oren Green, *Boston Medical and Surgical Journal*, Vol. CVIII., page 220, says: "From our present knowledge both clinically and experimentally, we are justified in asserting that the action of quinine upon the ears is to produce congestion of the labyrinth and tympanum, and sometimes distinct inflammation, with permanent tissue changes." Roosa also says tinnitus and deafness following the use of quinine depend upon congestion of the ultimate fibres of the auditory nerve in the cochlea, and that the redness of the drum heads is merely an index of the former condition.

Weber-Liel, as quoted by Pomeroy, page 346, says in his experiments in connection with Gruber he found no hyperæmia of the membrane or meatus from one gramme doses of quinine; but on the contrary, in five cases slight congestion previously present disappeared under its use; all resulting deafness disappeared.

Knapp, so Politzer says, who, "In cases of blindness and deafness caused by large doses of quinine, observed excessive paleness of the disk of the optic nerve, with almost complete invisibility of the retinal vessels;" and he believes that a similar state in the cochlea causes deafness.

Prof. Jacobi and some of the authorities in Germany think the cause anæmia instead of hyperæmia. I think it well, just here, since some authorities say that quinine deafness and blindness and blindness are the same pathologically, to give the result of the recent investigations of Dr. De Schweinitz in case of quinine blindness in the dog. Dr. De Schweinitz says:

"In *resumé* we may say in regard to the microscopical points, that we have thickening and changes in the walls of the central vessel (endo-vasculitis); organization of a clot, the result of thrombosis, an organization which has been carried on even to the extent of its being channeled by new vessels; widening of the infundibulum of the vessels as the result of the constriction of the surrounding nerve fibres, presenting appearances not unlike a glaucomatous excavation, and finally, practically complete atrophy of the visual path, including the optic nerves, optic chiasm, and optic tracts, as far as they could be traced. It seems, then, very likely that the original effect of quinine is upon the vaso-motor centers, producing constriction of the vessels; that finally changes in the vessels themselves are set up, owing, perhaps, to an endo-vasculitis; that thrombosis may occur, and that the result of all these is an extensive

atrophy of the visual tract. Not the least remarkable is the selective influence of quinine on the optic nerves and the optic tract. In the sections and the micro-photographs herewith presented, it will be seen that the ciliary and oculo-motor nerves, side by side with the optic nerve, are perfectly normal, and that even in the lenticular ganglion many of the fibres are perfectly intact, although others appear to have undergone a slight degeneration. The same, no doubt, is true of the other cranial nerves. The selective action of drugs is, of course, well known, the characteristic action of digitalis upon the heart being, perhaps, the most typical example. This, however, in addition to the well-known physiological action of drugs, appears to be a histological demonstration of such affinities. Why quinine should produce these lesions upon the nerves of special sense which supply the eye and the ear it is difficult to understand; that it has such action is unquestioned, and here meets with a positive microscopic demonstration. While, no doubt, the original effect is in one sense due to the influence of this drug upon the vaso-motor centers, this cannot be the entire explanation, or we should have similar actions under the action of well-known vaso-motor stimulants, like ergot."

Quinine, it is well-known, corrects tinnitus and vertigo when it depends upon anæmia and debility. Again, quinine is the remedy in Mènière's symptoms, which are given on page 525, Gruber, as, "Subjective auditory sensations of various kinds and duration, a feeling of alarm, uncertain gait, giddiness, which may become so severe as to cause the patient to fall down; momentary loss of consciousness; a tendency to nausea, or actual vomiting, and impairment of hearing up to total deafness after one or more seizures." It will be observed that I speak of Mènière's symptoms, not his disease, as such symptoms are not always the result of semi-circular canal involvement, but may be produced by disease of other parts of the labyrinth, or even of the auditory nerve near the place of its origin, or the spinal cord and brain. Cases of true Mènière's disease, (hemorrhage into the semi-circular canal) do exist, but are very rare, so rare indeed, and the symptoms so often the result of other pathological changes, that I think it would be well to drop the name. It is hardly necessary for me to say that this suggestion is not original with me.

To further show that quinine is indicated in some affections of the ear, and that it cannot only be safely given in some cases of suppuration of the middle ear, but may be an absolute necessity, I will report the case of:

G—— a married lady; has three children; is quite healthy. Was taken suddenly with severe earache right ear; I found drum head bulging, auditory canal swelled, some œdema over mastoid, and temperature of 103°F. I punctured the drum head, had leeches applied to the tragus, and applied dry heat. Next day all symptoms were better. The second afternoon symptoms worse;

hole made in drum head closed. Again punctured and again leeches, with relief from pain and high temperature. Relief again the next day; the ear discharging muco-pus profusely. The next day the ear still running freely, but in the afternoon there was great pain, with increase of swelling over mastoid. Morphine had to be given to produce rest; another day of improvement, followed by another of pain; recognizing that all symptoms were worse about 5:00 P. M. every other day, I anticipated the next exacerbation by 20 grains of quinine, 5 grains every two hours, the last dose at 4:00 P. M.; this checked the pain for that day. Symptoms improved very rapidly under the quinine, which was given every other day for several days; it was then left off, and the patient did well for three or four days, when there was a sudden exacerbation, with more pain and swelling than in the first attack. Quinine was again given with relief, and kept up for some days, with the result of a good recovery.

This is a case in which quinine was an absolute necessity. It did not injure the other ear, which was normal. I have seen three similar cases, but none so severe as this. I present this question, then, to the gentlemen present: Have any of you seen any case of permanent deafness, in which quinine was the only cause? It seems to me that the testimony of the general practitioners present, all of whom give a great deal of quinine, will be really of equal or more importance than that of the specialist. Take for instance the cases reported by Roosa; in the case of auditory inflammation reported as the result of quinine, there had been impacted wax for years. Had there not been impacted wax, with auditory canal inflammation, would the quinine have done any harm? Another case had typhoid fever; another case had been exposed to a severe storm on the bridge of his vessel on the ocean, enough of itself to have caused the trouble.

So in all the cases of quinine deafness reported, other factors entered, so as to in my opinion cast a halo of doubt about them. If asked the question, "Can quinine, in such doses as are usually given, produce deafness where there is no other complication?" I say I doubt the possibility. I of course exclude cases in which there is idiosyncrasy. Quinine though, as most other medicines, has its poisonous dose, and it selects the ear and eye under such conditions to demonstrate it.

DISCUSSION.

Dr. S. G. Dabney: I saw several years ago the only case that ever came under my observation where I thought there was permanent deafness from quinine. The case may be of sufficient interest to bear a second report; I reported it at the time in the *Archives of Otolaryngology*.

The patient was a very intelligent German woman between thirty and forty years of age. Unfortunately I did not see her at the time of the original illness when the quinine was administered, so I was obliged to accept her statements as to

what her exact condition was at that time. She said, however, that her illness was a very trivial one, and there was nothing in her description of the symptoms to call attention to involvement of the ear. She said she purchased at a drug-store twelve five grain capsules of quinine, all of which were taken inside of forty-eight hours, a total of sixty grains, and for several days afterward she had an intense noise in her ears, rendering her almost completely deaf. An examination of the drum membrane showed no lesion. The noises gradually subsided, but deafness was still very considerable; hearing no better in loud noise; aërial conduction for tuning fork longer and louder than bone—all symptoms pointing to labyrinth disease. Careful inquiry failed to develop any history of disease of the nose or throat sufficient to affect the middle ear. Judging from the history of the case, as elicited from the patient, and the symptoms present when I saw her, I concluded that the deafness was the result of the large dose of quinine, producing disease of internal ear.

In a recent article on this subject, Spear, of Boston, takes the ground that the aural symptoms from quinine and other drugs are really due to an affection of the center of hearing in the brain. It seems to me that this is rather a fanciful idea, especially in view of the fact that we see its effects upon the optic nerve and the membrana tympani.

As to the administration of quinine in ear diseases: I think we quite often have occasion to use it in suppurative inflammation of the middle ear. In this climate at least, it is not infrequently that we encounter suppuration of the middle ear, occurring during the course of malarial fever. I have had several cases which I can recall just now in which the patients have had all the characteristic malarial symptoms attending suppuration of the middle ear, and of course in such cases I administer quinine. I have had no bad effects from giving it in these cases except temporary increased deafness, and temporary increased ringing in the ears that was already present.

Roosa is still of the opinion that the lesion produced by the administration of quinine is an inflammation, or rather a hyperæmia, and that in a certain number of cases, it is followed by anæmia and permanent loss of hearing.

Dr. Turner Anderson: In response to Dr. Cheatham's request that we state whether we have seen cases in which deafness has resulted from the use of quinine—I have never seen a case of deafness follow the administration of quinine; if it has produced any form of ear disease in patients under my care I have not been conscious of it. There are some points in the paper which are exceedingly interesting to me, especially with reference to the influence of quinine upon the vasomotor system. That quinine does influence the involuntary muscular fibres in some way I believe is pretty well accepted at the present time. Just how this is brought about, and whether it is proper to compare the action of quinine to ergot,

cimicifuga and other drugs which are known to have an especial action in that direction, is a question.

Dr. T. H. Stucky: I have never seen any permanent deafness follow the administration of quinine.

Dr. J. A. Larrabee: We have certainly listened to a most admirable paper, and the conclusions which the author draws coincide, I think, with the experience of the most of us at least. Quinine, to start out with, is a muscular irritant. Both theories in regard to hyperæmia and anæmia are correct, but the one effect follows the other. The first effect of quinine must necessarily be to contract rather than to dilate the blood vessels; but that effect is followed, as a result of the contraction, by dilatation. If you use any agent which is going to contract the blood vessels down to the arterioles, you are going to have a corresponding relaxation.

Now if it were true that quinine produced permanent deafness, it would be a very unfortunate fact for people living in this part of the country. Quinine is given in the South and West with a very generous hand at least. Almost every practitioner begins the treatment of his case by the administration of quinine. But I think the number of cases of permanent deafness outside of other causes amount to practically *nil*.

Roosa takes away the etiology of his cases by stating the circumstances in which the condition occurred. A man might jump into the water and bring about incurable deafness in that manner. In attempting to explain the physiological action of quinine by its effects upon the blood vessels, it is about as hard as trying to explain, as has been attempted, the phenomena of anæsthesia by the same cause.

Some ingenious theories have been advanced concerning the production of anæsthesia by a play upon the blood vessels. Quinine produces its effect upon the sensorium by its presence in the blood in connection with nerve structure itself, not by dilatation or contraction of the vessels, just as chloroform produces its effect; it is not by producing anæmia or hyperæmia that chloroform acts—such explanation is not in accord with physiological research. So I believe that it is hardly possible for quinine administered in physiological doses to produce deafness of a permanent character, in the adult. In children I think mischief may be done by the administration of even tonic doses of quinine, because then we have not the same resisting powers that we have in adult life. In regard to quinine producing inflammation or suppuration in any portion of the body: I think the statements in this direction are a little remarkable, when we know that quinine inhibits the amœboid movement of white blood cells, and is of itself an agent to arrest and prevent suppuration. So that in the present light of therapeutics I cannot see how the effect of quinine could produce suppurative inflammation, or permanent deafness when given in proper doses. As to the

hyperæmia produced by quinine, I doubt if this is ever permanent.

Dr. Wm. Bailey: The subject under discussion is an exceedingly difficult one to speak upon, because notwithstanding the very general use of quinine, the physiological action of it is not fully understood. It is hard to make experiments and have observations sufficiently accurate to determine the real effect of quinine upon the economy with any degree of certainty; that is where the difficulty comes in. It seems to me, however, as against the proposition that quinine is capable of producing permanent difficulty in the hearing or sight, is the fact that difficulties of this character are not more common in malarial districts where quinine is in almost daily use, than they are in Northern districts where quinine is not used. I do not think the judgment of any man on the effects of quinine is worth very much who lives outside of a district where quinine is in absolute demand; under other circumstances the probabilities are that he would not understand the proper administration of quinine. In the cases cited by the essayist, as has already been stated, there were other conditions present to give rise to the phenomena, whether quinine had been administered or not. I believe, from the evidence observed in practice, that quinine in decided doses is capable of producing hyperæmia. I believe this is confirmed by the fact that this is diminished by the administration, at the same time, of remedies that diminish congestion, such as ergot, bromide, etc. This will lessen, I think, the effect of the quinine, and you can give larger doses of quinine if you will accompany its administration by these remedies. I think it is true that many affections of the middle ear are favorably influenced by quinine. It has also been our observation that many subacute inflammations are benefitted by making a more active irritation if you please; and even more than this exciting a more active inflammation; then upon the subsidence of that we may hope for further relief of the condition. I believe for instance, that chronic inflammations of the urethra are sometimes properly treated by exciting more active irritations; upon the subsidence of which there is further progress toward relief than would otherwise have taken place.

It occurs to me that the frequent administration of quinine causing temporary difficulties in hearing, and with such universal and complete recovery from that difficulty after the withdrawal of the remedy, shows very clearly that it is only a temporary disturbance.

Now, to show you again how we may misapprehend the influence of a remedy like the one under discussion: In some parts of the country it is firmly believed that quinine is an oxytocic; that it will produce abortion or premature delivery; and yet what is more common, even in the South, than to administer large doses of quinine during gestation? I think there we have an explanation in the fact that malaria produces a condition in which quinine, instead of being an oxytocic is

really a remedy that will prevent abortion when otherwise it would occur. Say we have a uterus, which from malaria, is beginning to empty its contents prematurely. We have no more valuable remedy for arresting the emptying of that uterus than quinine; but in labor, when pains are incomplete or where they are lost, 20 grains of quinine are better than ergot. And I simply conclude that ordinarily, outside of toxic doses, quinine does not have any permanent injurious effect upon either sight or hearing.

Dr. W. L. Rodman: I am sure that I have never seen a case of permanent deafness resulting from the administration of large doses of quinine. I have seen persons who were inclined to be deaf very decidedly affected by it. Because it occasionally happens that people who have taken quinine have ear trouble, they naturally attribute it to the quinine; but I have never believed that it had any permanently bad effect upon the hearing.

Dr. J. M. Ray: I have seen a number of cases in which ear trouble was certainly made worse by the administration of quinine. I do not know that I can recall any cases where I was convinced permanent deafness resulted from its use, yet it is a very frequent experience to hear people say quinine makes their ears worse, and refuse to take it on that account. I think the experiments of De Schwenitz, with which I was familiar, and also the later experiments of Dr. Roosa go to prove that the deafness produced by quinine is a nerve deafness rather than a middle ear deafness. Roosa's first experiments brought him to the conclusion that there was middle ear deafness, but his later writings show that in all cases where deafness followed the administration of quinine, there was some disturbance of the ultimate fibres of the auditory nerve.

There is no doubt but many cases of ear trouble are greatly improved by the administration of quinine. I have a gentleman under observation now who has suffered with earache for some time. When he came here he had fever every evening, temperature 101°F. By the daily administration of quinine his fever has disappeared, and his earache has improved. It is a case of sub-acute middle ear inflammation, which I believe will subside without suppuration.

Shuck Tea for Chronic Malaria.—Dr. J. W. Pruitt, of Russellville, Ark. (*American Medical Journal*), recommends a distillate of Indian corn husks (four pounds to sixteen gallons of water; distill out about eight gallons; add alcohol one ounce, and glycerine one-half ounce to each pint of distillate to preserve) in chronic malaria. The remedy, it seems, is a popular one (in the form of an infusion) in the Arkansas bottoms. The doctor first tried it on his son, then upon a great many of his townsmen—bottles of the distillate being given out free to whosoever would test it. Many reported themselves cured, some made worse. "One man said it not, only made the chills worse, but he believed it would make a well man have a chill." On analyzing the cases he discovered that the remedy was beneficial only in chronic cases, acute cases being often made worse. The doctor's dosage was one to two teaspoonfuls every two or three hours. He suggests that the remedy should be further investigated.

LIFE IN THE CELL.

BY JAMES A. CARMICHAEL, M. D., NEW YORK.

THE CARBONIFEROUS AGE.

BEFORE the advent of reptilian life proper, such terrestrial conditions as would be necessary for the maintenance of life of the creatures that the ever-progressive forces of cell evolution were about to project into existence, must be inaugurated and reach a certain maturity and perfection before the inexorable requirements of creative law would permit their appearance upon the earth. An intermediate era must begin and hold its place in cosmic evolution, and, just as in the antecedent periods that marked the origin, progress, maturity and decay of animated life, so must the next succeeding epoch of time undergo transformations of origin, of progress, of maturity, and finally, as in the inflexible order of the operations of nature, begun at cosmic dawn, continue through cosmic day, and end when cosmic time shall be no more. This intermediate era presented the unchanging phenomena of cell power, still manifesting the urgent and inextinguishable force of cell vitality. But it was an era that held no affinity with Azoic, Silurian or Devonian, which had now outlived their periods of usefulness, and must be relegated to the past, leaving their palæolithic records and fossil debris, which, like milestones to the traveller, tell of the passage of time and space; or, like gravestones to those still left behind, serve only to recall the life that once has lived.

What is the meaning of Carboniferous Era? Literally, it means the era or age of carbon, the age that produced carbon. We all know that the term carbon is applied to the substance that remains from the transformation and the slow decomposition of the organic matter of ligneous or woody material, and its development by a chemical process into tarry or bituminous substances, and that the vast forests that covered the earth away back in that terrestrial period, inconceivably remote, now minister to man's comfort and the maintenance of his innumerable industries through the inexhaustible supply yielded to him from the coal-beds which he still diligently seeks, and still finds hidden away in the bowels of the earth. And now, let us take up again the thread of the story of cell force in the new conditions that prevailed at this era of the earth's history. At the beginning of this epoch, those portions of the earth that had emerged from their watery bed, were sterile and bare, and stretched away in vast distances, with here and there isolated islands, and boundless marshes, sparsely covered with the primitive vegetation, an incomplete relic of the expiring Devonian Age. The living creatures in the waters had attained rapacious and predatory vigor, and from the bodies of many projected the embryonic indicia of the coming reptile. Other transformations, too, were in progress that were necessary to serve the needs of the amphibian now

in process of birth, and render it capable of dual life in its native watery element, and on the new earth that was being prepared for it. Meanwhile, what part was the vitagenic cell to play in this new condition of things? Could the same cell that made these living creatures, and prepared them for the adoption of the new life, fill the earth with another form of life, change the whole face of nature, clothe her nakedness in raiment that would take its varied hues from the sun, and hide the barren places in all the prismatic colors that glint in the solar rays? No! As we have elsewhere said, "Can a man gather grapes of thorns, or figs of thistles?" These stark and arid places must be made to blossom into the smiling landscape of plain and meadow, of rolling upland and overtopping mountain, all "clad in sober green," to meet and gladden the eye of the *άνθρωπος*, the coming man, whose upturned face, as his Greek name imports, shall behold, and with instructive reverence, look still upwards, and move his lips in thankfulness that he lives and sees. *Omnis vita e cellula*, and so it is here, but in another guise. The cell has its appointed work to do, but now that work will not develop a creature of sensation and motion. There is to be no progressive evolution of life, as from the unicelled *amœba* and onward by cell membrane, blastoderm, chordodorsalis and other agencies that begat Silurian and Devonian life. But there is a form of life to be begotten, and that form of life will manifest as marvellous phenomena of their kind as in the antecedent life. What a gracious and grateful task to follow them and expound them, did time and space permit. This form of life is the plant life, vegetative life, and the cell force that generates it will not be expended in the creation and elaboration of organs of special sense and of locomotion, but in the production and formation of woody fibre, foliage, efflorescence; the one the fauna, the other the flora that fills the earth.

In the Carboniferous Age, there was nothing wanting to stimulate the activity of the plant cell. Every element of its construction, with which our reader is too familiar to need more than a mere reference, and which the cellulology of to-day has reduced to the simplicity of ordinary education, felt the invigorating influences of the then existing telluric, atmospheric and solar conditions. All nature seemed to vie in contributing aid to foster and nourish the new life just begun. The warm, soft temperature, uniform and promotive of all vegetative life, the bright solar rays to paint their varied hues and colors on leaf and bud and flower, as they appeared later on in the Triassic period; the gentle rains to slake thirsty roots and urge the flowing sap to topmost leaf, and all these wondrous things the growth of cell force, cell life, aided by air, light, moisture, heat and prolific earth.

According to our author, to whom we shall again take the liberty of extensively referring, the first arborescent forms that appeared in the Carboniferous Age were the tree ferns, "which

grew abundantly at that time, and flourished in vast numbers." This specimen of the tree of that ancient time he has beautifully illustrated, and also made comparison of it with the modern palm of Brazil, which bears "a close resemblance to the ancient types." "None of the ancient trees of the Carboniferous Age produced fruits, while their modern successors, the palms, are, many of them, fruit-bearing." So says our author. The question seems naturally to rise in the mind, Why was this? And it seems as natural to answer that this was before the advent of the true reptile, before he had ceased to be a fish, and because fish don't, and never did, eat fruit or climb trees.

But to our mind there was another reason for piscine abstinence. There was no fruit because there were no fruit-producing cells. Then again, nature was and is God's handmaiden, and glorifies Him by the beauty, perfection and *fitness* of her works. Many other varieties of ancient trees then flourished, among them "the calamites and the sphenophyllum, which strongly resemble our modern fir and spruce. The lepidodendrons, too, and a vast variety of low-lying shrubs and plants, showing the enormous increase of cell growth." Then followed the maturity and decay of the immense forest growths, to be succeeded by new growths, whose mutual decay and transformation by chemical action formed the illimitable coal-beds of the earth and gave the name of carboniferous to this era of the world's history. Like the Silurian and Devonian, the Carboniferous is divisible into certain periods, viz: sub-carboniferous, carboniferous and Permian. But these are geological subdivisions, which we do not propose to pursue further than their mere mention and to remind the reader of the vast intervals of time between each of them that were necessary to fill their respective periods in telluric existence and growth. And now that the earth has become fruitful in abundant vegetation and consistently with the universal and immutable law of "the eternal fitness of things," and that other as inflexible law, that everything that exists was created for "some special purpose," the tender grasses, leaves, plants and shrubs have sprung into life and await the coming of another form of animal life—the true reptile that shall subsist upon them and consume them. We are here curiously reminded of a class of human beings of whom these palæozoic reptiles might be said to be the ancient prototypes, and a Darwin is not needed to trace their lineal consanguinity. Sixty-five years before Christ, a poet and philosopher was born in a humble dwelling on the banks of the river Auidus, in the district of Venusia and near the boundaries of Lucania and Apulia. To the scholar of to-day the name of "Horace" holds a consecrated place among his "Dii Penates," and he well remembers how the poet scorches with the flame of his contempt such men as lead idle, selfish and vicious lives. He will recall the pungency of the few words with which he designates

them: "*Nos numerus sumus et fruges consumere nati.*" "We are mere ciphers and born only to consume the productions of the earth." And so were the reptiles of the Permian period of the Carboniferous Age born only to consume the productions of the earth. The human representative of that ancient Permian period and of that more modern Horatian period is not extinct yet. He, too, was and is *fruges consumere natus*. He still lives in this nineteenth century and "flourishes like the green bay tree," and as long as Time lasts he will continue to "consume," to lead his idle, selfish and vicious life, and geology will have to find another name to commemorate the stratum wherein his bones lie. For all the good he has done in his worse than useless life, it were better had he by some occult process of metempsychosis lived in reptile form in those far-away Permian days. So, you see, they began early, these "consumers," and in these degenerate days it can hardly be said that we have improved the breed very much. There were reptiles in those olden times, huge, hideous monsters, whose bones lie concrete in enduring rock, and attest the day when they crawled upon the earth, but the *anthropoid reptile* hadn't come yet, and it wasn't until our boasted "*soi-disant*" civilization began that anthropoid reptilian refinement began. The famous French woman, "De Stael," once said: "*Le plus que je vois les hommes, le plus j'aime les chiens.*" "The more I see of men the more I like dogs." We have heard this sententious criticism attributed to Ingersoll of our day, but that was *only one* of "friend Bob's" literary pilferings and self-appropriations, and an example of the predatory license mutually indulged by genius.

We shall now trace as rapidly and succinctly as possible, the progressive phenomena of life as it appeared during the periods constituting the three divisions of the Carboniferous Era. During the first two, the sub-carboniferous and the carboniferous, it would seem as if creative law was more concerned in maturing terrestrial conditions for the maintenance of the more advanced forms of reptilian life, and to effect an easy and more complete coalition with and to be the more readily merged into the next succeeding and last period, the Permian. By the formation of vast marshes which were "formed, first, by the slow and gradual uplift of the land to within a few inches of the surface of the sea; second, by the filling up of the shallow seas by the washing down of sand and mud from the land, and, third, by the decomposition of immense quantities of vegetable matter that grew out of and fell into the shallow seas and turned to marshy vegetable mold. Those ancient marshes of wide extent partially caused a change in animal forms from the fish to the reptile, and were a permanent factor in causing a change of anatomical structure in the fishes and early reptiles." Vast varieties of the mollusk tribe, too, were in constant process of origin and development during the carboniferous peri-

ods, especially the Permian. Meantime the activity of vegetative life continued uninterruptedly, from the coarse grasses with which the marshes were filled, and onward through the increasing and more luxuriant vegetative flora, arboreal and other, to which we have already adverted.

The age of the true reptiles, the mesozoic, the second of the three generic ages, viz: the palæozoic, the mesozoic and the cænozoic, hence its name *μεσος*, middle and *σοος*, life, or a living animal, is the next to be considered as we pass on in our investigation of primitive life. The Mesozoic Age, like the preceding, the Carboniferous, has been geologically divided into three periods—the Triassic, the Jurassic and the Cretaceous. The first fact connected with the advent of this era in which we are especially interested is the inauguration of a more vigorous and vital cell activity than we have yet seen, and which will display itself in the creation and development of the reptilian and other monsters, the excavations of whose huge bones, even in this, our day, and in various parts of this, our country, are repeatedly the objects of special wonder, not only to the thoughtless and careless observer, but to the scientist and to the palæontological savant. Changes both anatomical and physiological in the original cell membrane that developed the fish from the antecedent sea-worm now assume a still wider and more extensive range of action and production, and from the cephalaspis of the Devonian Age to the nothosaurus, and on to the ichthyosaurus of the early mesozoic period, though a great step in the march of progressive development, yet a critical examination of their respective anatomical structure will show very many points of analogy, as also many other indications of the continuity of the unchanging purpose in creative law toward a still higher order of organization. From this point onward the three divisions of the Mesozoic Age present an almost endless succession of reptilian and other life, constantly meeting the eye of the curious seeker of the wonders of palæozoic creative law. We will content ourselves with a current enumeration of the most prominent among them.

According to our author, after giving a detailed description of the comparative osteological and other developments of the ichthyosaurus and nothosaurus with those of the next succeeding representative of saurian reptilian life, the "labyrinthodon," for the minute and elaborate details of which we are glad to refer the curious student to the interesting and scientifically instructive pages of our author, this last animal appeared in the Triassic period of the Mesozoic Age, and was "a transition from a swimming reptile to a true mammal; it was cold blooded, and reproduced its young from eggs. The labyrinthodon was the first of the true pachyderms." The contemporaneous forms of more advanced life, originated and continued during the Triassic and Jurassic periods among the mollusk tribe also, viz.: the

ceratites, the ammonites, the belemnites, the octopus and other predatory cephalopods. They were possessed of large and muscular tentacles, highly developed and succeeded each other in rapid continuity of progressive life. Next, a curious evolution of "half animal and half bat, the pterodactyl." The name given to this singular creature, *πτερον*, a wing, and *δακτυλον*, a finger, explains its dual organization. Our author describes it as "a saurian, and it was evolved from a former type of saurian. A close study of its osteology, the skull, cervical and dorsal vertebrae, ribs and part of the bones of the legs" will show its relations to former saurian life. Then followed the formidable teleosaurus, an amphibian, bearing a striking resemblance to the modern gavial of India. All through the Triassic and Jurassic periods, "great reptiles, fierce and rapacious, were the undisputed masters of the sea, and swarmed in great numbers along the extensive coasts. The sea swarmed with sharks, fishes and reptiles of monstrous size: The mosasaurus, nothosaurus, teleosaurus, plesiosaurus and ichthyosaurus, were masters of the sea. Ammonites, belemnites, and a host of other molluscan shapes, lived also in its depths." At the close of the Jurassic period, the great marine saurians suffered so marked a decline, that it was called "the close of the age of reptiles." Next succeeded the herbivorous saurians which ultimately became the progenitors of the marsupials, and marked the radical change from the oviparous fishes and reptiles to the "beginning of viviparous propagation." The terrestrial transformations of the third division of the Mesozoic Age viz., the cretaceous, consisted principally of "chalk or carbonate of lime in vast beds." These, like the coral deposits of the Devonian Age, were the result of the myriad cell activities of microscopic mollusk life, and to designate the localities in which exist the evidences of this activity, would be almost to mark the localities of the earth itself. The cretaceous period showed a subsidence of vegetative life, as compared with that of the antecedent Carboniferous Age. Reptilian life still continued, and though the predatory ferocity of many representatives of it that only obtained their full development during this period, and which owed their progenitive descent to the pre-existing reptilian carnivora, still remained, yet the more recent herbivorous animal manifested characteristics which were the antetypes of the generations yet to come, and yet to show their influences upon the development of a higher and more advanced order of animal life. We will cite a few of the formidable carnivora of the cretaceous period. The megalosaurus, "with the reptilian jaws and teeth, showing it to be a carnivorous saurian, although living exclusively upon the land, and whose pachydermatous integument foreshadowed the rhinoceros and hippopotamus of modern times." The mosasaurus, the pterosaurus or flying lizard, the dinosaur, "the terrible lizard" of the herbivora, the hylæosaurus. The iguanodon, "one of the largest and most formidable of all those ancient monsters," etc. Towards the termination of the

cretaceous period, bird-like forms of animal life appeared, and their rapacity may be estimated by the rows of teeth which suggested their name, "odontornithes," *οδους*, a tooth, *ορνις*, a bird. Hesperornis and ichthyornis, the latter a combination of fish and bird, *ιχθυς*, a fish, *ορνις*, a bird, and other varieties of cretaceous bird-like animals. Lastly, in this connection mention may be made of a huge saurian "whose fossil bones have recently been found in the upper cretaceous strata which lie along the eastern flank of the Rocky mountains, and to which the name of "triceratops flabellatus" has been given. The name was evidently suggested by three horny projections from the skull, *ter*, keras, and in the words of our author, "all the probabilities point to the hylosaurus of the lower cretaceous period as his progenitor."

ODDS AND ENDS REGARDING LACTATION.

By WALTER S. WELLS, M. D., NEW YORK.

THE study of the mother's milk long ago disclosed that it not only varies in richness in different individuals, but may vary greatly in the same woman, according to the time when drawn, her state of health or disease, and the hygienic surroundings.

It is well known that of all the fluids of the animal economy the milk approaches nearest in its composition to the blood, and like it separates into two parts, upon standing in an open vessel—one solid, one fluid.

While the secretion of milk is constantly associated with the parturient function, some curious cases are recorded showing that it may also take place independent of pregnancy, in consequence of protracted excitation of the nipples by a nursing child.

Belloc related the case of a girl who was obliged to sleep in the same chamber with a recently weaned child, and being annoyed by its cries, took it into her bed and put it to her breast.

In a few nights' repetition she was surprised to find that she had milk enough to satisfy its appetite.

Semple reported the case of a woman, mother of nine children, the youngest of whom was thirteen years old, and whose daughter-in-law having died four days after her delivery, the child was nursed by its grandmother.

The infant was puny and thin, and difficult to satisfy; and after several sleepless nights, in order to pacify it, the grandmother placed it to her breasts, from which no milk had appeared during the previous twelve years.

Not more than thirty-six hours had elapsed before madame was astonished to find her breasts become painful and enlarged, followed by as free a secretion of milk as she had been accustomed to have after her confinements.

For an entire year the child nursed at the same breasts which had given suck to its father twenty-four years before.

Audubert reported, over fifty years ago, the case of a woman, sixty-two years old, who had not had a child for twenty-seven years, and undertook to nurse her grandchild artificially.

From time to time she applied it to her nipple, with the result of finding, after a while, both her breasts full of milk.

She nursed the child for a year, and the secretion of milk continued after the child had been weaned two months.

At this juncture her daughter again became a mother; but as her milk dried up, the grandmother was able to nurse the second child.

The *duration* of lactation varies greatly in women, even when they do not suckle. In some it lasts for months, in spite of all that can be done to arrest the secretion.

Cazeaux reports the case of a woman, each time after her three confinements, having an abundance of milk long after her menses returned, which occurred six weeks after each birth.

And another, in which lactation continued so abundantly during forty-seven years succeeding the birth of her first child, that she was not only able to nurse six of her own children, but also seven others. She always menstruated regularly during lactation, and at eighty-one years of age her breasts still yielded some milk.

Desormeaux reported the case of a woman who suckled five children consecutively, which must have involved a lactation of at least six years' continuance.

On the other hand, the lacteal secretion, after beginning abundantly, may suddenly decline, and cease without any discoverable cause.

Many gradations are observable between these extremes, but the average duration of lactation of women is from twelve to eighteen months.

The *quantity* of milk varies still more than the duration of the secretion.

One woman, in other respects apparently healthy, may barely be able to supply nourishment to one child, while another may be able to suckle several at a time. Cases are recorded of women furnishing, in a single day, as much as one to two quarts of breast milk, and it seems that, in some women, the amount of milk increases with the birth of every child.

It has been noticed, furthermore, that women of the lymphatic temperament have less milk than others.

The *health* of the nursing woman is very important to the welfare of the infant, chemical analysis of the milk, in sickness, showing that its quality may be affected.

Becquerel and Vernois have shown by analysis that this is more observable in chronic diseases than in the acute febrile affections.

M. Bochart found the alterations in the elements of milk secreted by invalid women particularly unfortunate for the infant, causing it to be frequently affected with indigestion and consecutive enteritis.

The milk of women with phthisis should not

be given to an infant, nor that of women suffering from carcinomatous, or from contagious disease.

Inflammatory engorgements, phlegmons or abscesses of the breast, merit special attention, not only because they diminish the lacteal secretion, but because they communicate dangerous properties to the milk.

A simple engorgement of the breast may cause a viscid condition of the milk, and should it be forming an abscess, the microscope will detect the presence of the characteristic pus globules. Their granular opacity, and the property of being completely dissolved in alkalies, and of resisting the action of ether may be detected even before physical exploration of the breast itself detects the collection of pus.

Moral affections, such as fright, grief, violent anger, etc., have great influence upon the quantity and quality of the milk, often rendering the infant who has nursed it sleepless and affected with colic, diarrhoea, and even with convulsions.

A woman in the Hospital Cochin, Paris, was addicted to violent fits of anger, and her child, nursing after such paroxysms, invariably had convulsions.

This woman had already lost her first two children by convulsions similarly induced.

Menstruation recurring during lactation may influence the secretion of milk. As a general thing, however, women cease to menstruate while nursing, but cases are reported of those whose courses reappeared after from six weeks to six months following labor; while, in rare cases, others have menstruated as regularly and freely as usual, irrespective of continued lactation.

It is stated by authorities on this subject that the milk of animals is different in the rutting season from what it is at other times, and the menstrual epochs in women have been considered as bearing a strong analogy with the period of heat in the lower animals.

Some nurses who menstruate have been known, in consequence of the conjoined discharges, respectively, from the uterus and the breasts, to fall into a state similar to that of marasmus, the child also partaking in the decline.

Rachitis in children has been attributed to their being suckled by nurses subject to the regular recurrence of the menses during the greater part of lactation, as the phosphate of lime, so essential to the infant for the completion of its osseous structure, is eliminated largely from the nurse's milk during her menstruation.

The sympathetic effect of menstruation upon the breasts of women who have not become mothers has also been noticed.

Godey mentions a case in which the accession of the menses, in an unmarried woman, excited, each period, the mammary secretion to such an amount that the breasts became painfully distended and had to be drawn by another woman, or by a breast pump, to relieve the organs.

The possibility of uterine disease existing during lactation, should also receive the considera-

tion of the physician, especially if such disease should be of carcinomatous character.

The supervision of pregnancy during lactation is unfortunate for the nursling, as the milk loses both in quality and quantity, and the child emaciates from partial starvation, if the deprivation is not remedied by substitution.

Cases are recorded of women who did not leave off nursing throughout the entire duration of a new pregnancy.

Van Swieten mentions a woman whom he saw in the act of being nursed by her year old child, while she lay in bed undergoing the early pains of labor.

The effect of *medicinal* substances on the milk of the nurse, to which they impart their therapeutic properties, has long been known.

Over a hundred years ago, Haller, the Swiss physiologist, cured colic in nursing children, by administering anise to the nurse; and certain purgatives, as rhubarb, are known to purge the nursing child when taken by its mother.

Similar advantage is also taken to administer iodide potassium and certain mercurials, etc., to the nursing mother for the simultaneous cure of congenital or acquired syphilis.

It is thought possible that the administration of certain anæsthetics during labor may affect the milk of the mother.

M. Godey mentions the case of a new-born child refusing the breast of its mother for three days, when it was forced by hunger to accept, but it vomited the milk each time, until it was changed to another nurse, whereupon vomiting ceased at once.

He discovered later that the mother had inhaled ether during her labor, and believed the ether to have so affected her milk as to produce the disgust and regurgitation manifested by the child.

The mother's milk was very serous, and nitric acid turned it to a lilac-rose color, which was retained by the coagulated caseine. Under the microscope the milk globules showed very small, and there were numerous granular atoms.

It must be evident, from the foregoing compilation, that infantile existence is open to the chances of incurring much danger from deterioration, if not of deprivation of maternal nourishment; and the importance of a proper substitute for healthy human milk is equally obvious.

This desideratum has engaged the earnest attention of the medical profession in all enlightened countries.

The American Medical Association, at its session in 1888, appointed a *special* Committee on Infant Feeding, to investigate the so-called infant foods which crowded our markets and drug stores, competing to fill a demand which they were not only utterly unfit to supply, by reason of the then fact that none of the so-called infant's foods were scientifically proportioned or contained the true ingredients of human milk, but for the further reason that their administration usually made the infant sick, instead of nourishing it.

One reason for this we can readily understand, and that is the difference between human milk and cow's milk, the latter forming, in this country, the basis of artificial foods for children.

Cow's milk contains more protein matter, more fat, more mineral matter, and less sugar, and as a rule, in health, human milk is alkaline, while cow's milk is acid.

Another important objection to cow's milk, for infants, if given in its natural state, is that its casein is very likely to form an insoluble mass or curd, by contact with the gastric juice. The milk of the cow, coagulating in the infant's stomach, is difficult to dispose of, and is productive of serious mischief, causing colic and diarrhoea, if not worse results, since, if the cow's milk has not been sterilized, the curd is liable to contain germs of putrefaction, and these develop rapidly in the stomach, undergoing fermentation and changes productive of poisons which may prove fatal.

Or, if the milk contains bacilli of typhoid fever, or other zymotic disease, such disease is apt to follow.

Many ways of milk becoming affected, through the ignorance, untidiness, or dishonesty of dealers, are known to exist.

Dr. Cyrus Edson, Sanitary Inspector, New York Board of Health, states that he has found frogs, small eels, and water snakes in milk brought to this city.

The chances are largely in the ascendent that to these samples of nutritive amphibia, the water containing them, scooped into the milk cans by our worthy lacteal purveyors, was further enriched by faecal deposits in the streams.

The origin of fatal epidemics of typhoid fever have been, as is well known, traced to water thus impregnated.

Other instances have been noted of the conveyance of the germs of scarlatina, diphtheria, etc., through the medium of cans of milk, standing uncovered for a time in the room where cases of these diseases lay, the milk being sent away later for sale at distant houses, to be followed by the development of such disease in the parties consuming it.

In selecting cow's milk for conversion into infants' food, the cows themselves should be able to pass muster as to the quality of their milk, and its freedom from inherent properties believed to be capable of developing tuberculosis, as well as to its freedom from acquired contamination after being drawn.

The Committee of the American Medical Association, referred to, agreed that if pure milk from perfectly healthy cows, were partially pre-digested by the process of peptonization with fresh pancreatine, the temperature sufficiently raised to destroy the ferments, then reduced to a powder by evaporation, and to this added dextrine to supply the carbo-hydrate, we would then come as near the production of a proper food for infants as might be possible in the absence of the healthy mother's milk, the latter always being given the preference.

Farinaceous foods, of course, are unsuitable for young children, because of the absence of ptyalin in the secretion of the salivary glands, prior to dentition.

There being no milk food for infants in the market at the time when the American Medical Association recommended the process above mentioned, prepared by this process, or in any similar way, a manufacturing firm in New York City invested \$50,000 in new appliances to their already extensive laboratories at Goshen, to carry out the recommendations of the Committee.

They achieved the processes for producing a pure milk-food for infants, based upon the sound physiological principles indicated, making a dry, powdered milk, instantaneously soluble in water, and in several ways improved by suggestions from the highest authorities, whom they consulted.

At the suggestion of Prof. Stutzer, of Bonn, Germany, Food Analyst for Rhenish Prussia, they increased, slightly, the proportion of lime, the element so important to the development of the infant's osseous system; increased, also, the proportion of milk sugar, as advised by Dr. J. Lewis Smith, and followed strictly the rules given by Prof. Vaughn, regarding the purity and freshness of cow's milk, selected for this laboratory.

Prof. Stutzer, the German analyst named, has made analyses of all the infants' milk foods for sale in the several markets in this country and in Europe, and has shown that with the *single exception* of those made by Carnrick's processes, no artificial food made with cow's milk is sufficiently or properly proportioned as to nutritive constituents, to sustain the life of the infant for many days.

We regard the importance of this *single exception* in favor of Carnrick's products sufficient to warrant impressing the fact upon all whom it may concern.

In view of the previous great mortality among nursing infants, the percentage of which has been largely reduced by the adoption of this perfect substitute for the mother's milk, no greater boon could have been conferred upon the human family.

ON THE INCREASE OF CANCER.

BY JAMES W. HUNTOON, M.D., LOWELL, MASS.

A CONTRIBUTOR of the *New Review*, Professor Dunn, is right in assuming that the increase of cancer is of grave importance; and it is profoundly to be deplored that able writers and teachers, like Professor Dunn, who assume to speak authoritatively, when discussing so serious a question, should content themselves with what in American political slang of the day is called "threshing over old straw," and of course getting nothing of value therefrom. A hospital was endowed a few years ago in New York, to treat cancer; an able man, Dr. Flint, who was appointed to teach the young physicians to treat cancer, as reported spent nearly all his time telling his hearers that in

his opinion there was no cure for cancer, with scarcely an inquiry as to prevention or remedy. Now comes Professor Dunn in a long, able article without a suggestion of any great value, unless some might suppose that his suggestion that some zealous bacillus hunter should find a microbe which the chimerical advocates of microbes in general believe to be the cause of cancer, or which is utterly improbable in view of our experience with other diseases—if such should ultimately prove to be a fact—here, however, Professor Dunn is unfortunately "threshing over straw" which is at least five years old, for bacillus hunters have beaten this straw thoroughly; as far back as 1887, an able contributor to the *British Medical Journal* gave us results of thorough investigations of various witnesses in this direction, and the final facts that the desired bacillus was finally found, with its description; among the many prominent hunters in this field we may mention Kubasoff, and as long ago as the above date, Scheurlen announced with much positiveness that he had found the cause of cancer in a specific microbe; later we have had others of equal positiveness, among which might be mentioned Armand Ruffer, with many others who might be mentioned. "What a man hath, why doth he yet hope for?" But this knowledge has not checked in any degree the ravages of cancer, or materially benefited the sick world, and there is no more ground to suppose that it ever will than there was to suppose a few years ago that that quintessence of imbecile fancy which led a large proportion of the profession to believe that sulphurated hydrogen would cure consumption; so as we see, many found years ago what Professor Dunn still hopes for; now when we find these things in the green tree, what shall we find in the dry?

A thousand pities that these men would not turn their attention to the chemical and physical aspects of the question. It is well known that some chemical substances largely influence the formation of cells. For instance, chloride of zinc.

Our old time friend, Surgeon Purcell, of Brompton Cancer Hospital, who has had the best opportunities to obtain most useful knowledge pertaining to the general treatment of cancer, and who probably has made the most commendable use of the same, of any man living, or perhaps who ever lived, has found, as others have proved a thousand times, that chloride of zinc exerts an influence on the character of cicatrix formed—even in connection with cancer—under its influence which renders the tissue so far from the peculiarities of cancer tissue as to be as it were a resistive wall, or under some conditions as a firm island in an ocean of disease, which for a long time resists the onset of the destroying tide, while cicatrix formed in the same tissues under other influences generally take on the vascular form, which is well known to be exceedingly inclined to become infiltrated and break down in cancerous ulceration, and this influence accounts for the fact that chloride of zinc is the best yet known application for cancer.

It is a matter of general knowledge that citric acid destroys life in man by acting as an irritant of the gastro-intestinal mucuous membrane; it is generally conceded that irritation causes the infiltration and various other phenomena of cancer in constitutions prepared for its ravages. It is also well known that oxalic acid causes a destruction of the mucous membrane of the stomach and other mucous surfaces and a breaking down or softening of the inner coat of the stomach; it is thus evident that a milder solution would change cell formation in a greater or less degree.

It is also a well known fact that the tomato, so very largely used as a food—nearly as an entire meal frequently with some persons—since cancer has been so fearfully on the increase, contains both of these acids, as high as 10 grains to four quarts of tomato juice, as shown in the *American Journal of Pharmacy*, Vol. 43.

A noted physician in western New York died a few years ago from disease of the stomach, who expressed a conviction that tomatoes caused the disease in his case. Post mortem examination proved that his affection was cancer. The writer and many others have noticed similar cases where such impressions prevailed, and why not? It is the prevalent belief of our best authors that irritation causes the development of cancer in persons prepared for it; the tomato contains large quantities of citric acid, which destroys life by irritation, as also does the green stock of rhubarb or pie plant; also each contains large quantities of oxalic acid, which destroys the mucous membrane of the stomach, and converts the inner coating to a soft pulpy mass, like some other caustics. Why should they not in weaker solutions exert such influence over cell formation or cells? For instance, especially where an ulcer or cicatrizing wound exists.

Let all physicians who have noticed facts on this subject of food, do humanity the kindness to report them at once through the journals, that as soon as may be, the ravages of this fearful scourge may be checked. Let those who tell us only what others have done be called little; let those who tell us only what others have not done be called less; let those who only prate about cancers being incurable be called least. Let those who tell us what cancer is be called great; let those who cure it be called greater; let him who demonstrates to us the real cause and prevention, be called *greatest*; let all try to speed the day.

But fortunately there are some facts of more or less value settled in the minds of the most able investigators, of which it would seem to be of great importance that all people should be informed:

First, experience has amply shown that cancer is not contagious, so no one need suffer for want of care on account of fear of contagion.

Second, it seems sufficiently evident that the smoker more often suffers with cancer of the upper digestive organs than any other class of people.

Third, that a bruise of a gland of the breast, as by leaning against a piece of furniture or other hard substance, often causes cancer of the breast;

also the womb often suffers from cancer manifestly from injury; these are very important facts, as the knowledge of them might often prevent cancer, by causing people to avoid the danger; there is another more important question, on account of its more general application, which requires a careful study, and that is a good ground of belief that the acid juice of the tomato and pie plant, when eaten freely, exert an influence on the protoplasm or production of cells, especially when without new walls, which predisposes to that condition which leaves them liable to take on the changed conditions we find in cancer, and further, whether those acids may not influence recently matured cells and tissues thus injuriously.

One acid present is an irritant and the other a caustic, and manifestly may exert an influence to cause the cells to break down in that exuberant destruction we call cancer, especially on mucous surfaces, as of the digestive organs and bladder, in both of which cancer is fearfully frequent. May they not exert an influence on cell formation, or even mature cells, especially new ones without walls, which may be contributory to the sum total we call cancer? and especially emigrant or migratory cells thus acted upon may implant their deteriorated stock in the tissues, and there multiply themselves indefinitely; these tramp cells find their best accommodations in vascular tissues; indeed, this is the mode of cancer growth. It is lamentable that able men could not be induced to turn their attention to subjects which promise so rich rewards; it is a pertinent fact that the tomato as a food has been used generally largely just about as many years as cancer has been so fearfully on the increase, and the same is in a great degree true of the pie plant; the strange indifference of some microbists is illustrated by a reply the writer recently received from one of them in answer to an inquiry as to his opinion about the tomato and the pie plant when used largely as a food, as a possible cause of cancer; his reply was that he would as soon suspect the watermelon and bread. And yet, that man, as a noted physician, ought to know that the juice of the tomato contains a large quantity of the deadly oxalic acid, equal to ten grains to four quarts of tomato juice, and that the pie plant also contains the same acid in large quantities, which, when combined with calcareous base in the root, give a large per cent. of oxalates, in some varieties as high as thirty or forty per cent. It is well known that oxalate of lime is found largely in the urine of persons eating tomatoes and pie plant. It is devoutly to be hoped that practical men would work this very promising field, and tell us more particularly of the effect of these acids on the various conditions of tissue in their formation and history, especially in connection with accidental lesions, as an ulcer or injury; it is a pertinent fact, now well known, that cancer prevails most among more advanced civilized people, where the great luxury of the tomato is used most largely, while the sav-

age, who does not eat it, is comparatively exempt from cancer; one noted physician, of whom the writer made inquiry, replied that he could find it in his heart to say nothing about the tomato except that it was a beautiful luxury; it is true that the combination of acids in it give a pleasant taste, but it is certain that it is dangerous when taken largely as an article of food, as by many; and it is amazing that physicians should take for granted, without demonstration, that so strong a solution of so deadly an acid would not injure the formation of tissues, and tissues themselves. There is still a difference of opinion among the best observers on some questions pertaining to cancer, and too little positive knowledge exists. It is but a short time since the great observer, Virchow, surprised us by informing us that cancer originally contains no cell peculiarly its own.

Professor Dunn's ipse dixit that "there is no such thing as cancerous, that is to say, a cancerous stomach," had better been unwritten: our practical friend, Purcell, finds cancerous conditions, and writes of such conditions variously.

CLINIQUE.

TREATMENT OF GOITRE.*

By J. L. HOWARD, M. D., LOUISVILLE, KY.

IN presenting the subject of treatment of goitre, I wish to outline the method of applying electrophoresis, with a report of cases so treated.

Around the Ohio Falls, especially among the hills across the river, known as the Knobs, we find goitre, mainly of the fibrous and cystic varieties, by no means rare. This is in all probability due to the large amount of calcium salts in the water used for drinking purposes, while the low estate, physical, mental and moral, of the inhabitants of the barren limestone hills of Southern Indiana at this point, doubtless favors the disease. This character of goitre is seldom benefited by other means than the surgeon's knife. The hypertrophic variety, however, whether acute or chronic, in young or old subjects, may be cured by means of the electrophoresis of iodine.

Simply hypertrophy of the thyroid gland is seen principally in females at the time of puberty, during and following pregnancy, and at the menopause. The cases which I shall report are taken from these types, the patients being free from all social, atmospheric or telluric conditions.

Many remedies have been fashionable in this treatment, and at one time burned sponge was much lauded, but was discarded upon the discovery that its curative powers were due to the iodine contained in it. Painting the swelling with iodine does little else but discolor or blister the skin; the

injection of iodine into the gland is dangerous; but by the use of the galvanic current in carrying the drug directly into the substance of the gland, we have a treatment absolutely harmless, free from pain, theoretically scientific, and practically effectual.

We can demonstrate by a simple test that iodine is actually driven through the tissues by an electric current. If the positive electrode of a galvanic battery, saturated with an iodine solution, is placed on one part of the body, and the negative electrode, containing starch, is applied some distance away, the blue reaction of the iodine on the starch is obtained so soon as the circuit is closed.

In the application of iodine by electrophoresis to hypertrophic goitre, the mode consists of a cup shaped electrode made of gutta percha* such as I here present, and as used by Professor H. A. Cottell at the University Clinic. In this cup is placed a small pledget of absorbent cotton, moistened with a solution of common salt, and containing from eight to ten gts. of Churchill's Tr., or a saturated solution of iodine in iodide of potassium. This is placed over the goitre and the cathode on the back of the neck. Carefully watching the milliamperes, we turn on the current and gradually increase the strength until the patient can taste the iodine. Ordinarily ten to twelve milliamperes are sufficient. It is necessary to cover but a small portion of the surface of the tumor in this procedure; the discoloration will be slight, owing to the use of a watery solution of iodine, and blistering will not result. Each application will require ten to fifteen minutes, as a rule, and should be repeated from two to three times a week, or every day, as the case requires.

The following reports are taken from the record book of Dr. Cottell's clinic, and from cases treated at my office.

Case No. 1.—Mrs. N., aged thirty-seven, the mother of six children, the youngest being three months old, was first seen in October, 1891. The thyroid swelling was scarcely noticeable and had been first observed during her last pregnancy. Potassium iodide was administered internally and inunctions of the red iodide of mercury were used over the goitre. After a few weeks' treatment, with slight improvement, she was lost sight of. During the following November the case was again seen. At this time the swelling had increased considerably, each lobe being the size of a hen's egg, with the isthmus very large, and causing irritability of the throat by pressure. Under the application of iodine, driven in by the galvanic current and applied regularly three times a week, the gland regained its normal size in four and a half months.

Case No. 2.—Mrs. S., aged twenty-two, consulted me on the 15th of last April for a goitre about the size of a hen's egg, which had enlarged

* Abstract of paper read before meeting of Louisville Medico-Chirurgical Society, December, 1893.

* This electrode was devised by Dr. Cottell in 1891.

very rapidly. The patient had first noticed a swelling in the region of the thyroid gland about six weeks before her confinement, her baby at this time being six weeks old. The electrophoresis of iodine, used twice a week, brought about a favorable result.

Case No. 3.—July 7th, Mrs. C., aged thirty-six, the mother of eight children, developed a hypertrophy of the thyroid during her last pregnancy, being first noticeable at about the third month, and increasing very rapidly until the sixth month, when five applications of iodine, by means of electrophoresis, resulted in such a marked improvement that the patient was allowed to discontinue treatment until after confinement.

Case No. 4.—On June 15th, 1883, Nora F., aged fourteen years, came to the University Clinic, giving the following history: Father and mother still living, one brother died of tuberculosis, previous to two months ago had enjoyed good health, when the thyroid enlargement had set in, and had increased rapidly until seen. The general appearance of the girl was very good. She was rather large for her age and roundly developed. Although she had never menstruated, she was not anemic. The enlargement was enormous and bilateral. The right lobe was the larger and reached out almost on a line with the chin. The neck at this time measured eighteen inches. Electrophoresis of iodine was applied three to four times a week until the 15th of September, when the measurement was fifteen and one-half inches. At the present time the measurement of the neck is barely fourteen inches. She began menstruating in October.

During the last eighteen months, sixteen cases of goitre have been treated by electrophoresis at the University Clinic, with the following results:

Five cases under treatment at the present time, all improving.

Four lost sight of.

Seven discharged cured.

DISCUSSION.

Dr. D. T. Smith: I do not think the paper should go without remarks, if only to emphasize the excellent results reported by Dr. Howard. We all remember the first introduction of this system of electrophoresis some six or seven years ago by a physician from Algeria, who had, as he believed, succeeded in conveying iodine through the system with this method; he visited the Academy of Science in Paris, and was permitted to exhibit this action of electricity, which he did with apparent success. The incident was very widely published as a wonderful discovery, and one that gave promise of great good. At a subsequent most careful test made in the laboratory of Professor Dujardin Beaumetz, and under his direction, it resulted in complete failure. On account of the high authority of Dujardin Beaumetz the failure was published as extensively as the apparent success had been,

and nothing more was heard of electrophoresis for two or three years. It was taken up again at different times but was not very widely believed in. I do not know whether the tests have been gone through with carefully, but since it has come into vogue again after the exposure referred to, it is presumable that a fair test has been made. Dr. Howard's results are remarkable. We know he has reported them just as he has seen them, and whether it is a succession of favorable cases, and cases that might have gotten well anyway, is a pertinent question, considering the slowness with which this treatment is adopted. From the quantity of iodine used, it would seem that very little would be left in the tissues.

The iodine is decomposed, and in seeking the opposite pole passes almost instantaneously through the tissues, and we may suppose that very little of it is left in the substance of the gland; not more than would be left by the old-fashioned method of absorption, when iodide of mercury is put on a fresh surface. Possibly the action is more effective when electricity is used. Certainly if the good results Dr. Howard has obtained should prove general, it would be one of the most important therapeutic discoveries of the present day. My own success in the treatment of goitre has been poor. I have used electricity but have not attempted the electrophoresis of iodine. When using iodine I have simply employed the old-fashioned method of applying it locally. Some of my patients have experienced benefit from this form of treatment, but the effect has not been very marked.

Dr. J. B. Marvin: Several points in the paper are extremely interesting to me. First, the statement of the frequency of goitre in the locality mentioned. Second, the sub-division that the essayist makes. If I heard him correctly he excludes from the paper those cases of goitre which are cystic, fibrous in character, or calcareous degeneration, and treats only of the softer, more compressible, elastic and acute cases. Those cases are comparatively frequent, and always seemed to me to belong to a different category from the cases of genuine goitre that occur in Switzerland among the Cretins, and by no means infrequently in this country. Another point—the frequency with which the essayist's cases have occurred during pregnancy—all of them except one. Just there comes an interesting question, whether disappearance of the goitre was the result of treatment by iodine, or whether they were just such cases as would have recovered themselves. I have seen such cases in girls after puberty and in pregnancy. Soft, compressible, rather swollen or full necks, were regarded as marks of beauty. We often see them in pregnant women, and after pregnancy has elapsed and the patient has returned to her normal condition we hear nothing more about goitre.

As to the question of treatment: Taking it for granted that the cases reported have all gotten well, it is little short of remarkable. This man-

ner of treatment is no new procedure; years ago I used electricity considerably. I remember Dr. Wilson had a case under treatment and, at my suggestion, he used electricity quite freely; however, with a different idea than Dr. Howard mentions; that is, we thought we could drive any quantity of this substance into the tissues and decompose it, or by putting it directly in contact with certain tissues, decompose it, that the agent would be obtained in a nascent state, probably much more active than would take place in the molecular condition, the difference being similar to that between ozone and oxygen. I am a little skeptical about value of this treatment. The quantity of iodine driven through the goitre would be so small, how could it act?

I think there is a chance of some of us who are less expert than Dr. Howard being misled by one statement he made that the iodine being decomposed in the goitre and the patient tasting it. If galvanism be applied to the neck anywhere the patient will taste it. The patient is liable to mislead you. This subject is attracting more attention lately than ever before, not only that iodine may be carried into the tissues by electricity, but other medicines may be introduced in that way. I certainly hope that the essayist will pursue his investigations further and inform us as to the results.

Dr. A. M. Cartledge: Before Dr. Howard closes the discussion, I will simply ask: Have not men claimed quite good results in the character of cases referred to from the use of galvanism alone?

Dr. J. L. Howard: No; that has long since been given up.

Dr. T. S. Bullock: Considerable attention has been drawn to this subject recently by the application of electro-therapeutics, from a gynæcic point of view. Massey, of Philadelphia, has written a very interesting monograph, giving the status of electro-therapeutics and the results obtained by him. He seems to state positively that in fibromata of the uterus that are not cystic he has gotten results almost similar to those detailed by Dr. Howard in the treatment of goitre. Also in the various forms of menstrual disturbances, notably menorrhagia, with consequent subinvolution, where the blood vessels are greatly dilated, etc., he reports wonderful results. Also, in the treatment of various inflammations, metritis, etc., and expresses the hope that this method of treatment has come to stay, and that they will make such very rapid progress in this department that therapeutics of to-day will soon be left far behind. I believe it is a therapeutic agent of undoubted value.

Dr. J. B. Marvin: Bearing upon what Dr. Bullock says: I think we are liable to get a misconception. Massey uses electricity in an entirely different way; he sends enormous currents through the affected parts, that Dr. Howard could not use about the head.

Dr. W. L. Rodman: In regard to the point raised by Dr. Marvin as to the frequency of

Cretins: It certainly must be as he says, that they are very infrequent in this country. I have seen a great many cases of goitre, and have never seen a typical case of Cretinism as described in the books on surgery. Furthermore, I made some investigations several months ago, and wrote a number of letters to the superintendents of various feeble-minded institutions of the United States. I was interested, because I have never seen a single case of goitre in feeble-minded children in the institution at Frankfort, Ky. My father-in-law, who has been Superintendent there for the last fifteen years, tells me that there has never been a case of goitre in that institution since his superintendency. Dr. Wilber, of Kalamazoo, Mich., who has a private institution for feeble-minded children, and who was formerly Superintendent for many years of the State Institution of Illinois, had rarely, if ever, seen goitre in feeble-minded children or idiots. This I learned from him at the meeting of the Kentucky State Society at Frankfort last May.

The treatment of goitre with iodine gives very satisfactory results, whether it is employed locally or otherwise. I remember one case, and Dr. Howard will also recall it, occurring in a young girl from New Albany. She came to the University Clinic five or six years ago, with an enormous goitre, which disappeared very readily under biniodide of mercury ointment. I have seen excellent results from using iodine locally and internally.

I am satisfied that the medicinal treatment of goitre is the only treatment to be considered. I do not believe in surgical treatment, because we cannot often hope to find one part of the gland affected in these troubles, and unless only one part of the gland is involved, surgery would be out of the question. Complete removal of the gland is invariably followed by myxœdema. Partial thyroidectomy, on the contrary, gives satisfactory results. Experience in the last few years has proven this, especially the large number of cases operated upon by Kocher, of Berne.

Dr. J. L. Howard: As to whether iodine really passes through the tissues: My paper was very hurriedly written, and I made no attempt to prove the theory by quoting from books, but simply gave the result of my experience in a few cases treated by electrophoresis. However, as stated in the paper, it can be demonstrated by a simple test that iodine is actually driven through the tissues. I have tried the experiment myself, and have often obtained the blue reaction by applying the anode, saturated with iodine solution, to one part of the body, and the cathode containing starch being applied some distance away. The blue reaction on the starch is obtained immediately after the circuit is closed.

As to the cases I have seen: I did not give the details as fully as I might have done, especially the fourth case I reported. (N. F. æt. 14 yrs.) I feel absolutely certain that the goitre in this case would never have disappeared had it

been let alone. Even after she began to menstruate the goitre was very large, and it has been a very obstinate case. She has now been under treatment about six months. Usually ten to twelve milliamperes are sufficient, but I feel sure that a current of this strength would have no effect upon the goitre in this case. We employed fifteen to twenty milliamperes frequently, with good results. The galvanic current was abandoned several years ago in the treatment of affections of this character, as it was proven that no improvement followed its use. I saw an article not long ago in one of the journals where Faradism was used with favorable result. I really cannot see how Faradism can be of benefit.

Only one of the cases I reported was treated during pregnancy. The other two cases I saw during pregnancy were not treated until after the child had been weaned. The first case I reported, (Mrs. N., æt. 37), had been told to wait until after the menopause, when the goitre would pass away, but instead of that it grew gradually in size. I feel certain that none of the cases treated would have recovered without treatment, most of them being of several years' standing, and with a history of gradual enlargement of the gland.

CORRESPONDENCE.

THE EFFICACY OF MERCURIAL VAPOR IN THE TREATMENT OF DIPHTHERIA.

The medical measures used in the treatment of diphtheria are as varied as they are numerous. Yet I have seen the best results follow the treatment of drugs, even in small doses frequently repeated. When you have under treatment cases in which there is an extension of the pseudo-membrane to the larynx, it is a complication that demands immediate relief, and it is in these patients that I would like to ask your special attention to the value of the mercurial vapor and the chloride of lime.

Dr. Neidhard, of Philadelphia, states the following, from his large experience in several epidemics of diphtheria in Philadelphia:

1. Cold damp air fosters the development of the disease.
2. Persons of a so-called scrofulous diathesis are particularly liable to it, and are most fatally affected.
3. Kali, bich. kali chlor., muriatic acid, nitric acid, bell., cantharides, lachesis and crotales, given in appreciable doses, are the remedies which have been used with the greatest success in the most malignant cases.
4. The use of bromine in diphtheria or in diphtheritic croup, has met with little or no success.
5. He has much faith in the use of chloride of lime in all cases of diphtheria, both mild and malignant.

He makes a saturated solution of chloride of lime, of which he puts from ten to twenty drops in one half glass of water, to be taken in teaspoonful doses, every half hour if required. Other remedies may be used with the chloride of lime, if required.

In addition to advocating the measures which were suggested by Dr. Neidhard, I have used the mercurial vapor with great success in laryngeal cases.

I use it as follows:

The top of a tomato can or a tin cup is perforated with ten to twenty holes, and is placed over a candle or alcohol lamp, under the child's crib.

Bricks are placed under the can so that the flame of the candle will not be higher than the middle of the can.

Thirty grains of calomel are placed on top of the tin between the perforations, the crib is enveloped in a sheet, the child is kept in this position until the calomel has passed off as vapor; this is about five or ten minutes.

The application to be repeated every three hours if necessary.

W. WILLET MOON, M.D.

Brooklyn, N. Y., January 7, 1894.

CONGENITAL PREOERVOICAL SINUS.

To the Editors of THE N. Y. MEDICAL TIMES:

On Feb. 7, 1891, I was called to attend Mrs. B., aged 33, healthy, born in Ireland, whom I found in labor with her fourth child. Labor proving to be tedious, I was relieved by Dr. Eliza K. Morgan, who delivered the patient on the following day of a healthy boy. Attention was soon called to the fact that two minute openings existed in the infant's neck, of sufficient size to admit the point of a common pin, one on each side, about one-fourth of an inch above the sterno-clavicular articulations, just at the margins of the sterno-cleido mastoid muscles. The child, now nearly three years old, I examined to-day, and found the sinuses still patent, and apparently unchanged in regard to size or amount (a few drops in 24 hours) of a viscid secretion which has existed since birth. Careful inquiry as to etiology elicits no prenatal impression and no other case of the kind on either maternal or paternal side of the family, the history of which is known for four generations. There is, however, a partial arrest of mental development in Mrs. B.'s second child, now nine years of age. The father, aged 39, also of Irish parentage, seems vigorous in mind and body, and of tastes quite intellectual.

The etiology of this case, although obscure, seemed still more obscure as to its proper therapeutics; but finally both problems were solved by Dr. Rudolph Mater, in a contribution to the *Phil. Med. News*, Dec. 2, 1893, which I forward, hoping that the editor of the *TIMES* may see fit to republish it, especially as the value of a single case is always enhanced by association with others of a like nature, but more especially because of the scientific excellence of Dr. Mater's paper.

Aside from the theoretic interest which these cases involve, it is evident that they teach an important practical lesson, viz.: Any treatment except a radical and skillful surgical operation would probably be much worse than useless.

My first impulse was to close these openings with a pencil of arg. nit., but being in doubt, I waited for further light, which as before stated, I received. The inconvenience and deformity in my case being so little, the parents have been advised against interference of any sort.

Respectfully yours,

W. F. MORGAN, M.D.

Leavenworth, Kan., Jan. 7, 1894.

THE ORIGIN OF CIRCUMCISION.—At a recent session of the Anthropological Society of Paris, M. Letourneau spoke of the custom of the Egyptians of practicing phalotomy on the vanquished, a custom which still obtains among Abyssinians. Every warrior who has killed an enemy, says Sir James Bruce, presents to the chief a bloody prepuce; at the conclusion of the ceremony each trophy is returned to its owner, then taken home and prepared in the same way as American Indians do their scalp trophies or "coups." This custom existed also among the Hebrews, for it will be recalled that the son of Jesse, in order to become the son-in-law of King Saul, was required to bring in the foreskins of a hundred Philistines. This ritual (circumcision) had its origin and became extended as an act of homage to the Deity. The usage of offering portions of the body to the gods has been, and yet is, very widespread. It is a symbol of complete sacrifice, that has become partial by the lessening rigor of morals. It is thus that blood, or fingers, or the hair was offered as a sacrifice by the early Christians.—*La Nature*.

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ANGINA PECTORIS.

IT has generally been believed until recently that the cause of angina pectoris is due to atheroma or ossification of the coronary arteries, but we know that condition often exists where there is no angina and that it is found independent of either atheroma or ossification of the coronary arteries, or fatty degeneration of the heart muscles. These conditions of the heart and arteries have been shown by recent investigations to be the result, rather than the cause of angina. Almost every physician, if he recalls cases which have suffered from this terrible malady, will remember their attention has been called to the purely spasmodic type of the disease before there was any apparent indication of heart trouble. Any one who has witnessed the frightful spasms of pain when the pallid face and the scarcely perceptible pulse showed the fearful nature of this heart convulsion, a convulsion in which the fearful pain in the chest and the vise-like grip on the heart seemed to be crushing out life, can readily understand why the loss of tone in the heart and blood vessels and their degeneration should be secondary to the disorder of the nerves of the heart, which regulate the tension of arterial circulation. We should expect to find this disease more intimately associated with aortic regurgitation than with lesion of any of the other valves of the heart, because with its persistent to-and-fro movement the blood is too restless to be appropriated, and the nutrition of the arterial walls and

the nerves suffer in consequence. In large cities, where men live out of town, the hurrying to reach the cars is one of the most fruitful causes of angina, followed by positive heart disease, especially in persons of a gouty or rheumatic diathesis. Uric acid is almost always present in these diseases, and the arterial tension varies with the amount of uric acid circulating in the blood. Dr. Haig, whose experiments on himself are of great practical value, found in his own case that mineral acids diminished and alkalies increased the uric acid excretion. By diminishing the alkalinity of the blood he could free it from uric acid, relax the arterioles, quicken the pulse, relieve constriction of the heart and pain in the head, while by increasing the alkalinity of the blood he could flood it with uric acid, slow the pulse, producing sluggish circulation in the brain, with the attending symptoms of heart and nerves.

We know the blood is less alkaline when the body is doing active work, and reaches its highest point of acidity about midnight or in the small hours of the morning; at the same time, also, and from the same cause, the pulse tension is the highest. The action of the uric acid through the blood upon the nerve centers explains why all nervous disorders are apt to be worse in the morning, and why angina pectoris, which is peculiarly a disease of the vaso-motor nerves, is more likely to be roused into fearful action at that time, the presence of uric acid being like the touch of the whip to the restless horse. Understanding the intimate relations between the brain and the heart, through the vagi on the one hand, and the sympathetic nerve on the other, we can see how the influence of the mind in strong emotion or mental shock may bring on a serious paroxysm in those predisposed to the attacks. As to the cause of the pain, we have seen no better explanation than that of Brunton, that it is generally due to the weakness of the heart, in proportion to the resistance it has to overcome. The muscular fibres are thrown into a state of spasm, as they are made to contract in their weakness against a resistance which it is difficult to overpower, and the pressure which ensues gives rise to excessive pain.

In our treatment we aim, of course, to relieve the arterial tension arising from blood pressure. One of the most active agents during the attack is amyl nitrite. Dr. Brunton, in his experiments on animals, showed that amyl nitrite relieved the blood pressure, not so much by weakening the action of the heart as by dilating the large and small blood vessels, and that in all probability this

dilation is produced through the influence of the vaso-motor nerves; this, together with the tracings, having showed that angina pectoris was caused by a spasm of the circulatory organs. In addition to amyl nitrite, sodium nitrite and nitro-glycerine may be used in the spasms, also hypodermic injections of morphine, atropine and strychnine. Galvanism may be of use, also arsenic, quinine, phenacetin and antifebrin in strengthening the nerve tone of arterial circulation. One of the most painful cases of angina pectoris I ever saw was not only relieved but cured by a dose of atropine, in which the patient, misunderstanding our directions, took three times the amount ordered, producing temporary blindness and deafness, but she never had another attack. There is no disease which in its general treatment requires a more careful watch of nutrition and surroundings than angina pectoris.

THE PROGRESS OF PSYCHOLOGY.

PROFESSOR CATTELL, of Columbia College, in reviewing the progress of psychological knowledge, in an article in the *Popular Science Monthly* (*Boston Med. and Surg. Journal*), speaks most encouragingly of the future possibilities of the laboratory study of this science. The old-time methods of speculative psychology are past. Psychologies are now written which do not range at large through metaphysics, logic, ethics and æsthetics. Gradually the true differentiation of the science and its proper correlation to other studies are being appreciated. It is recognized to be a kindred and equal division of philosophy with physics, physiology or chemistry, and not a subordinate addendum to any one; and this recognition has resulted in the attempt to apply the methods and measurement of exact science to the study of the mind.

The backwardness of psychology is not surprising. Certain material needs must be satisfied before there is time for self-observation; and the elements of physical science are not only more necessary to life than knowledge of the mind, they are also more easily obtained. It is natural, therefore, that as biology is more backward than physics, so psychology is more backward than biology. It is this very backwardness of psychology which accounts for its close connection until very recently with philosophy, which, as knowledge increased and a division of scientific labor became necessary, has been obliged gradually to yield one science after another a separate field.

"Philosophy is not the arithmetical sum of the special sciences, but has a peculiar task—to investigate the conditions of knowledge and to form a theory of the ultimate nature and meaning of things. Psychology is no more concerned with these matters than is physics; its subject-matter corresponds exactly to that of any other natural science; and as a natural science, it need not, and should not concern itself with the origin, destiny and meaning of mind, but wholly with the phenomena of mental activity."

For this reason it is important to realize what should not be done in laboratories of psychology. They are not intended for the study of physiology. The functions of the nervous system may throw light on the workings of the mind, but the debt is reciprocal. The commonly used term, physiological psychology, is awkward. There is a science of physiology and a science of psychology, and there are relations between body and mind. But these relations are wider than this—they are between matter and mind. The world is one world, and all science is interdependent; but the development of psychology has drawn a sharper line between mental and physical processes than was ever recognized before, and psychology can never be made a branch of physiology.

As to the practical application and value of psychological knowledge to the daily life, there is in the proper conduct of a laboratory much to be hoped for. As the result of such useful application, he hopes to see more rational progress made in methods of education, that the poor children may no longer "contribute to the progress of educational methods somewhat as the frog contributes to the progress of physiology. In our laboratories of psychology we can test the senses and faculties of children. We can determine whether the course of study is developing or stunting fundamental characteristics, such as accuracy of preception, quickness of thought, memory, reasoning, etc. We can learn what methods best strengthen each of these faculties without injuring the others. The over-tasked teacher finds a child slow, and places it with more backward children, which increases its slowness. A more exact test of the child's mind may show that it is indeed slow, but that the slowness is more than counterbalanced by intensity and range. Methods must be applied which will shorten the time of thought, and will not interfere with its force and extent. We can determine what size and composition of class, what length of lesson, session and term are

most favorable. We can learn whether it is better for the student to do a thing, to see it, to hear it, or to read about it. We can never build a road to leaning which need not be travelled by the student, but we can build a royal road in the sense that it is the shortest and best of roads." Above all, our tests and measurements will demonstrate the value of learning itself, and tell us whether under given circumstances it is secured by the development or sacrifice of more essential qualities, such as the health of body, serenity of mind, common-sense, honesty and kindliness.

Similarly we may make direct application of psychological tests in medicine or in the solution of many of the subtle sociological questions of the day. Indeed, the measurements and statistics of psychology, which at first sight may seem remote from common interests, may in the end become the most important factor in the progress of society.

LARGE DOSES OF STRYCHNINE IN PULMONARY AND CARDIAC DISEASES.

IN a recent address before the Philadelphia County Medical Society, (*Boston Med. and Surg. Jour.*) Dr. Thomas J. Mays advocated most strongly a more frequent use of strychnine in the treatment of pulmonary and cardiac disease. In his experience he has found better results from the use of this drug than from any other single remedy. It is his belief that many affections of the lungs and heart are fundamentally dependent on disorders of the nerves which supply these organs, and that the curative effects of an agent in these diseases rests largely on the power which it has of correcting this primary aberration.

He contends that the best effects have not, as a rule, been obtained heretofore, owing to the administration of too small doses. The sixtieth or fiftieth of a grain he thinks comparatively worthless, and for some time he has been in the habit of beginning with at least a thirty-second of a grain, which dose he gradually increases to the limit of toleration. This may be high as one-tenth, one-seventh, or even one-sixth of a grain four times a day for several months continuously, permanently, or again increased after a time. The only untoward effect he has noticed has been, at times, a slight tendency to cause diarrhœa.

The mode of administration has some influence upon the effect produced.

In asthma, Dr. Mays obtains the best effect by introducing about a twentieth of a grain under the skin, and administering about a thirtieth or a

twenty-fifth of a grain by the mouth four times a day, and gradually increasing this in the way above indicated. Hypodermically, it is given once a day or every other day, and, if possible, in the evening, until there is an approach to the production of the toxic effects of the drug. Suitable doses of phenacetin, quinine, capsicum and ammonium muriate will enhance its action.

In bronchitis, both acute and chronic, strychnine checks the cough, diminishes the expectoration, improves the appetite, and puts to one side the whole constitutional relaxation and feebleness frequently present, especially in the chronic form of this disease; but it must be given in ascendant doses.

In acute pneumonia, he gives a twentieth of a grain morning and night subcutaneously, with an additional twentieth of a grain by the mouth every three or four hours.

In cardiac disease, he has found in strychnine a most valuable adjuvant to digitalis. Each fulfills its own indications, which are distinct; strychnine, in cases of disease from want of nutrition and proper innervation, as shown by irregular intermittent pulsation of a weak heart; while digitalis is preferable in cases where there is a want of compensatory power in the heart muscle, as in valvular incompetency.

Bearing in mind this difference, strychnine should be prescribed when the nerve-supply of the heart is enfeebled through auto-intoxication, such as is found in the post-paralysis of infectious diseases, and in poisoning from alcohol, lead, mercury, etc.

Irregularity and intermittency of the heart's action are frequently benefited by the administration of large doses of strychnine, and more often than not do we find that digitalis is utterly useless in such cases. Sometimes the irregularity will remain even under the influence of strychnine, but the symptoms which are dependent on, or a part of this condition—such as pain in the precordium, orthopnœa, oppression of the chest—will improve or disappear, especially if suitable evacuant remedies are used at the same time.

Even in purely valvular disease there comes a time when digitalis fails to maintain relief. It has aided in restoring muscular power and nutrition, but when the nervous energy begins to flag, and the heart walls begin to relax, digitalis no longer possesses the requisite spurring properties.

The pulmonary circulation becomes impaired, œdema and congestion of the lungs follow, and death is threatened by way of the pulmonary or-

gans. It is at such a time, when digitalis fails to counteract these many incidental complications, that strychnine has its superior value as a tonic to the waning nerve energy of the heart and lungs.

CENTRALIZATION.

THE strongest advocate of centralization must admit there are some cases where it does not apply. Perhaps no one commission ever organized in this State has created so much unfavorable criticism as the State Commission of Lunacy, and the demand for a change in the law or a wiser interpretation of it goes up to Albany from every part of the State. The Trustees of the St. Lawrence Hospital, in their report to the Legislature, voice public sentiment in a very clear and emphatic manner, which the law makers of the State will do well to heed. The trustees say:

"The Board desires to record itself again in favor of such central supervision of the management of the State hospitals as shall put salutary checks upon extravagant expenditures or other abuses of administration, as we understand the Legislature intended by power conferred upon the State Commission in Lunacy, but we must earnestly protest against the assumption of powers on the part of the Commission which denies, or renders nugatory, authority given by statute to managers and resident officers. We believe the Legislature never intended to supersede the local authority, but instead aimed to create a wise and proper supervision of the hospitals by a central co-ordinate body; nor does the statute, to our mind, imply otherwise, though a different construction is being enforced by indirection and advantage of situation.

"The act that went into effect upon the first day of October last, has given us about three months of experience, and has been in operation for a sufficient time to show us that in the administrative functions of the hospital we have practically no power. This might not be objectionable as a personal relief, provided we were at the same time relieved of responsibility; but we cannot learn that your honorable body has relieved us by statute from the responsibility created for us in the organic law. If we are relieved of both power and responsibility, then the need of Boards of Managers does not longer exist, and they should be permitted to lapse into desuetude or be wiped out altogether.

"The question that now presents itself more plainly than ever before in the history of this State,

is whether the interests of the State, as well as the interests of the insane committed to its guardianship, will be better served by a Central Board with absolute power, over which there can be no supervisory or controlling body except that of the Legislature, or by a divided responsibility in the several local Boards of Managers, as heretofore, with a central supervisory body having ample power to correct abuses, either by appeal to the Executive, the Legislature, or the courts. It must appear self-evident that a better service can be maintained under the latter system than under the former. We cannot believe it is your intention to set us aside, and elevate a service that imputes to us, as to all local Boards of Managers, neglect of and incompetence for our responsibilities."

APPENDICITIS IN THE FEMALE.

IN closing a clinical article in the *American Gynecological Journal*, on Appendicitis in the Female, Dr. Egbert H. Grandin says: "I recognize a catarrhal form of appendicitis, the tendency of which is towards resolution, and the treatment of which, generally, does not call for surgery, by the rather insidious onset, by the high grade thermometric range, by the non-localization of the area of increased tenderness at the outset; and I recognize a purulent appendicitis, calling for the knife as soon as it can be reached, by the fulminant nature of the initial symptoms, followed by low grade temperature and area of tenderness ordinarily marked at the start at the point to which McBurney's name has been attached. In this form of appendicitis, operation should not be delayed for hours or days, or until the appearance of a tumor. What we must forestall is perforation, leading to general purulent peritonitis and death, or to peri-appendicital abscess, with its septic sequelæ. To avoid all this the diseased appendix should be extirpated without delay. Finally, operation is neither difficult nor protracted. In the vast proportion of cases, if the standard rules for operating are followed, it is as easy to find the appendix before rupture, as it is the nose on one's face. *In a doubtful case it is preferable, indeed, to make an aseptic exploratory incision, and to be proved wrong, than to hesitate until nature makes the diagnosis for us through perforation of the appendix.*

"Detail in regard to the manner of operating is uncalled for in this place. There are simply three points on which I desire to lay stress.

"First.—The vertical incision, just outside the

border of the right rectus muscle, bisecting the line from the umbilicus to the anterior spine, appears to me to be preferable, as it gives more working space, and as bringing us directly over the cæcum.

"Second.—The Trendelenburg posture should always be used, since it enables one to see as well as to feel, and further enables us to guard against infection of the peritoneal cavity in the event of the appendix rupturing during extraction.

"Third.—If fortunate enough to reach the appendix before perforation, protect the peritoneal cavity against any virulent pus which may exude during extirpation, by packing the surroundings of the cæcum with sterilized gauze wrung out of a fifteen volume solution of peroxide of hydrogen, a solution which is innocuous to the patient and deadly to the pus."

HOW SHALL THE DISPENSARY ABUSE BE REMEDIED?

A CORRESPONDENT in the *Medical and Surgical Reporter* discusses our editorial entitled "A Plan to Remedy the Dispensary Abuse" at considerable length, and concludes that "there is no reason why the general management of the dispensary system should be disturbed, as all that is needed is that the circumstances of every applicant be rigorously investigated."

That every case should be "rigorously investigated" is the very point at issue and one which the dispensary officers assert they are powerless to accomplish!

It is useless to clamor for reform unless we have some means of promoting the desired end, and this every general practitioner has.

The editors of this journal have no personal interest at stake in this matter any further than it affects some of their professional brethren in which they are interested, and who should show more spirit in rectifying the great wrong being done them than they do. We had hoped that there would have been some concerted action before this, either by our societies or by a meeting of general practitioners.

There is no question but that if anything is to be accomplished it must be done by organized effort, and to that end we invite correspondence from any who are interested, with a view to some organization for the purpose indicated. We shall be glad to receive articles for or against the plan we have suggested, and, as far as possible, they

shall be published. Our only object is to help our professional brethren as far as we can, still keeping in view the duty we owe to suffering humanity.

Prompt and decisive action must be taken, if anything is to be accomplished. What we want is to formulate the most practical and useful plan, and we are open to any criticism or suggestion which may be offered.

PROGRESS IN THERAPEUTICS.

DR. GEORGE H. FOX, the eminent dermatologist, read a paper recently before a section of the Academy of Medicine, in which he denounced the routine prescribing of arsenic in skin affections, and also the use of irritating ointments, etc. The remarks so agree with our experience in such cases that we could not resist the impulse to make note of it for the benefit of others who did not hear the statements. The subject under discussion was the skin affections of children, due to reflex causes, and we were pleased to note the advance which has been made in the nosology and treatment of these diseases. We have always believed, as is now claimed, that the etiology of these cases should include errors of diet, etc., and that the cause was more than skin deep.

We have also found that the cause could sometimes be removed, when the correction of errors of diet, etc., did not relieve, by the administration of drugs, carefully selected, according to individual idiosyncrasy, when generalization with the same means had utterly failed to be of service.

Calomel will sometimes reach these cases wonderfully, and so will arsenic, if properly selected. There are a great number of drugs which would not be thought of in connection with the skin lesion, which, when the case is studied to the profoundest depths of its pathology, will yield satisfactory results.

One trouble is that we do not study our cases as individuals, but rather in *classes*, and as we cannot be sure that any two cases of a given affection will require the same treatment, we fail in the attempt. To our mind, Dr. Fox's wholesale denunciation of drugs in skin affections is not borne out by clinical experience, based upon careful study of drug effects. Drugs should be studied in their dual action, and then results may be obtained which will be surprising. There are some finer points in the selection of drugs to which we should pay more attention than we do;

then we shall not find skin affections so difficult to cure, even with drugs internally.

There must be some reason, for instance, why calomel, as quoted by Dr. Fox, does not cure every case of eczema, and we ought to be able in the majority of cases to differentiate; then we could claim truly to possess a scientific therapeutics.

The reflex skin affections in which we have found arsenic of service have been only those of a dry, scaly nature, dependent upon gastro-intestinal irritation, due to a dryness of the mucous membrane from some cause, accompanied with more or less burning sensation. In these cases there will be systemic disturbance sufficient to cause restlessness and sometimes anguish, with a desire to moisten the parched tissues. With such a picture no one need fear but that they will cure their patient with arsenic.

The above analysis illustrates what we mean by the finer points of drug selection, and there are many remedies in our materia medica which can be studied to advantage in the same manner, and then reflex skin diseases will not be the bugbear they now are.

HEALTHY MEAT.

THERE is a popular feeling that the Jewish manner of inspection and slaughter is a guarantee of healthy meat, and it is very common in large cities to find in a prominent place in the market the word "Kosher," in Hebrew characters, showing that the cattle have passed inspection and were perfectly healthy, and that the animals were killed by bleeding. That there are two sides to the question is evident from the statement in the January issue of *Public Health*, of J. Lawrence Hutton, M. R. C. S., himself a Jew, thoroughly conversant with the Jewish manner of slaughtering, which he condemns in the strongest terms as cruel and clumsy, and says so far from the meat being better than so-called Christian meat, that it is not as good, from the fact that it is more prone to decomposition and therefore does not keep fresh as long. Dr. Hamilton quotes Sir Benjamin Richardson, who says that less blood is retained in the flesh of an ox killed with the pole-axe, than in that of an animal put to death according to the Jewish ritual. Dr. Hamilton says the Jewish system of meat inspection is a farce, from the fact that the inspectors are ignorant of veterinary science, and that the "cut-throat method" of killing is needlessly cruel and revolting, the duration of the dying often lasting from eight to

twenty minutes, during which the animal passes through the periods of terror, pain and faintness. With the so-called Christian method death is instantaneous. The opponents of vivisection might find in the Jewish slaughtering not only facts to disperse a popular fallacy, but also enough to put an end to needless suffering.

HYDRAULIC MASSAGE.

OUR attention has recently been called by Dr. Shaffer, the distinguished head of the Orthopedic Hospital, where the machine is in use, to a plan of hydraulic massage, which bids fair to revolutionize this department of medical practice. A bath tub, or a cylinder for the arm or leg is perforated with holes and attached to a force pump. The patient being immersed in the tub, the jets of water pass through the aqueous medium, striking the body or the limb with a force which can be graduated up to fifty pounds. The action upon the body resembles the pressure of soft velvet fingers, with varying degrees of intensity. It will be readily seen that this machine, which is the invention of Mr. Blount, an old navy officer, and a prominent hydraulic engineer, can be utilized with benefit when no other form of massage will be of much service.

SIR ANDREW CLARK, whose death at a ripe old age was recently announced, did not agree with the idea so popular at present that the human body, when prostrated by disturbance in any of its organs, requires absolute rest to recuperate and get back on the track again. The distinguished doctor speaks with authority, for he himself in early life was given up to die from consumption, and yet, notwithstanding his hard work, his health became so firmly established that he outlived many of his contemporaries, and gained a reputation exceeded by none in his profession. The solution of the problem is simple, and should serve as an example to those who are constantly breaking down and have often to leave work for weeks or months to recuperate. In a clinical lecture in the London Hospital, Dr. Clark gives a very excellent prescription for health.

"Labor," he says, "is the life of life. And especially is it the life of life to the delicate. And when any organ is sick it is then truer than in health that even in sickness and delicacy it is better for the organ to do what work of its own it can, provided it can do it without injury. And from a considerable experience of tubercu-

lous pulmonary disease, I can say with perfect confidence, that those who have done the best have usually been those who have occupied themselves the most. I never knew my own parents. They both died of phthisis. At the age of twenty-one I myself went to Madeira to die of phthisis. But I did not die, and on coming back, I had the good luck to get into this great hospital, and in those days they were not very pleased to have the Scotchmen coming to London to occupy such appointments. The members of the staff had heard that I had tubercle, and they wagered 100 to 1 that I would only have the appointment six months at most. The reason given for that was that I did not eat and worked too hard. I got the appointment. Thirty-eight or thirty-nine years have gone since that time, and all the other doctors are gone. Only I am left here on the staff—an old gentleman—not dead yet."

Labor is life, but "worry is killing. It is bad management that kills people. Nature will let no man overwork himself unless he plays her false—takes stimulants at irregular times, smokes too much, or takes opium. If he is regular and obeys the laws of health and walks in the way of physiological righteousness, nature will never allow him or any other person to work too much. I have never yet seen a case of breaking down from mere overwork alone; but I admit that it is necessary above all things to cultivate tranquility of mind. Try to help your patients to exercise their wills in regard to this—for will counts for something in securing tranquility—to accept things as they are, and not to bother about yesterday, which is gone forever; not to bother about to-morrow, which is not their's; but to take the present day and make the best of it. Those affectionate women who will continually peer into what lies beyond never have any present life at all—they are always grizzling over the past or prying into the future, and this blessed to-day, which is all that we are sure of, they never have."

DR. CARINO, of Palermo, founds a diagnosis of hereditary syphilis, which in every case has proved correct, on the occurrence of an obstinate hiccough a few hours after birth, lasting from one to three weeks. The hiccough proves obstinate to all the usual remedies, but disappears after the child has been treated with Van Swieten's solution, and the mother has taken large doses of iodide of potash. The author believes that the hiccough depends upon a neuropathic diathesis, to the development of which syphilis contributes.

DR. WM. MOORE, of this city, claims to have found in permanganate of potash, an antidote for morphine, proving his belief by swallowing three grains of the morphine, and then four grains of the permanganate of potash without deleterious effect. The experiment was performed before the West Side German Clinic. Dr. Moore had previously experimented upon rabbits and other animals, and then upon himself. He was so sure of the efficacy of the antidote that he would not fear to swallow ten grains of sulphate of morphine, to be immediately followed by eleven or twelve grains of the permanganate of potash. He admitted that when administered alone permanganate of potash was deoxidized by the gastric juices, but positively asserted that when morphine was previously given, promptly followed by a larger quantity of the potash, the latter would select the soluble salt of the morphine, oxidize it and render it harmless before it could enter the system.

The Board had deemed the experiment to be dangerous, and protested against it, but Dr. Moore persisted, and, as the apothecary was instructed not to dispense the morphine, the experimenter had weighed it out himself. Dr. Collzer, of No. 109 East Fifty-fourth Street, thought it would have been better to have made the trial on a dog, as in some conditions of the stomach the antidote might fail to neutralize the morphine. He regarded the discovery as important in cases of accidental or suicidal poisoning, permanganate of potash being a drug in common use for various medicinal purposes, and easily and quickly obtainable. Dr. Moore is preparing a report on his experiments and their result.

DR. CHARLES L. DANA, gives in the January *American Journal of Medical Science*, an exceedingly interesting case of chorea, its history, treatment and autopsy, including a minute microscopic examination of the superior parietal lobule and upper central convolutions of the brain, and also of the basal ganglia, the internal capsule, the pons medulla, and upper part of the spiral cord. The conclusion reached is that there must be in order to produce chorea a specific kind of irritation of the cells. This need not be of one kind; it may be a rheumatic poison or a diplococcus toxine. But the specific irritants are not numerous, for though the motor fields undergo innumerable forms of injury and disease, chorea occurs but rarely, and only when the proper regions are irritated. There is nothing which would

explain the phenomena of the disease so well as to suppose that the specific agent producing chorea is a microbe, and perhaps some form of the diplococcus. The various types of chronic chorea could be explained by the changes in the intensity of the irritation, its special localization, and the degree or organic change, which it evidently induced.

THE Paris officials, according to the *Druggists' Circular*, have made an order forbidding the sale of any ice for alimentary purposes which is not produced from water taken from the drinking supply of the city. Ice of unknown quality may also be sold, but for industrial uses only, and all dealers are required to store the two kinds in separate places, and transport them to customers in separate wagons. It would be well for State Boards of Health to look after this matter.

THE *Medical News* announces that it is "definitely against revision" of the Code. If we are not mistaken a rather important State Society has adopted a resolution in favor of "no Code" whatever! What are you going to do about it, is asked by many. Medical Codes are claimed to be elaborations of the "Golden Rule," as if that "rule" in all its simplicity were not sufficient for the guidance of men in the various walks of life, and equal to all emergencies and complications. We would suggest that the codists try for a while living up to the simple, unelaborated "Golden Rule," and see where they will come out.

THE Ward's Island Hospital Training School for nurses, will graduate its first class Feb. 3d. The diplomas will be presented by President Porter, of the Commissioners of Charities and Correction, and the medals by Dr. George Taylor Stewart.

A VERY interesting case is narrated in the *Lancet* of the use of subnitrate of bismuth by Dr. Spuargini, of Moscow, in an extensive burn with marked benefit. After cleansing the surface it was well powdered with bismuth and enveloped in an absorbent cotton wool dressing. The dressing was changed three times during the three weeks the man was under treatment, after which he was discharged cured.

THE city of Tampa, Florida, has a population of 12,000, and an annual death rate of only 12 per 1,000. Of these deaths during the month of December, five were under one year of age. During the month of December there were but three cloudy days.

THE Cholera Conference, under the auspices of the French Government, called the "International Sanitary Commission of 1894," to inquire into the international relation of Asiatic cholera, convened in Pau, January 24th. Each of the great powers of the civilized world were invited to send their delegates. The President appointed for this country Dr. Stephen Smith, of New York, Dr. Edward O. Shakespeare, of Philadelphia, and Dr. Preston H. Balbacke, of the Marine Hospital service.

A PERFORMANCE of Ibsen's masterpiece, "A Doll's House," will be given at the Empire Theatre on the afternoon of Thursday, Feb. 15th, in aid of the Maternity and Training School Departments of Hahnemann Hospital. Minnie Maddern Fiske will appear as Nora, supported by a finished cast.

CRANSTON'S famous hotel at West Point is becoming a rival as a winter resort to Lake-wood. The broad piazzas, extending over 500 feet, are inclosed in glass and steam heated, with a southern exposure of 300 feet, where the sunshine can be enjoyed for eight hours in a day. The atmosphere in winter resembles that of Davos Platz in Switzerland, frequented by consumptives, asthmatic and rheumatic patients.

NEUBOLIA is the name of a drug recently introduced to the profession from the west coast of Africa, partaking of the nature of ipecac and coto. Dr. J. F. Eastman, in the *Provincial Medical Journal*, found it of great use in the malarial troubles of that region, and of especial service in dysentery, where it seemed to act not only as an astringent, but as a tonic to the muscular coat of the arteries and to the entire intestinal tract. The first stage of dysentery was met by castor oil or a saline purge, after which the neubolia was given, from 15 to 60 minims of the fluid extract, frequently repeated at first, and as the dysenteric symptoms abated, at longer intervals until the cure was completed.

To discover truth is the best happiness of an individual; to communicate it the greatest blessing we can bestow upon society.

HIS FIRST CASE.—A young doctor attending his first case of labor was very much frightened when the membranes ruptured and the waters gushed out, and while looking in utter astonishment at the placenta, the husband said:

"Doctor, do you think she will die?"
"Die? Of course she'll die. Don't you see her bladder's busted and her liver dropped out?"—*Hot Springs Medical Journal*.

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BIBLIOGRAPHICAL.

E. B. Treat announces in press for early publication A System of Legal Medicine, by Allan McLane Hamilton, M.D., assisted by Lawrence Godkin, Esq., of the New York Bar.

Messrs. Johnson & Johnson have issued a little work on "Belladonna," in convenient form for ready use, which will be sent free to our readers upon application and mentioning this journal.

The Maltine M'fg Company has sent to the profession a calendar for 1894, embellished with the portraits of eminent medical men, which seems to us not only unobjectionable ethically, providing permission is first obtained, but of service in familiarizing us with the faces of our prominent men. Of course such an undertaking must be carried out with great care, as has been done in this case.

The first number of *Mathews' Medical Quarterly*, devoted to diseases of the rectum, gastro-intestinal diseases, and rectal and gastro-intestinal surgery, edited by Joseph M. Mathews and Henry E. Tully, Louisville, Ky., is of unusual excellence. A large number of contributors give the result of their experience in short, practical articles, covering a wide field of investigation. There is room for such a journal, which, conducted on its present lines, cannot fail of success.

The *Essentials of Practice of Medicine*, by Henry Morris, M.D., published in the list of Saunders' Question Compend, has reached its third edition since 1890. In this edition all obsolete and useless matter has been omitted and the very latest diagnosis and treatment substituted. An appendix with 300 essential formulæ, gathered and arranged by William M. Powell, M.D., and a monograph on the chemical and microscopical examination of the urine, by Lawrence Wolff, M.D., add materially to the value of the book.

SYLLABUS OF LECTURES ON THE PRACTICE OF SURGERY. Arranged in conformity with the American Text-Book of Surgery. By N. Senn, M. D., Ph. D., LL. D., Chicago. Professor of the Practice of Surgery and Clinical Surgery in Rush Medical College, etc., etc. Philadelphia: W. B. Saunders, 1894.

This syllabus will be found of service by the teacher, as well as the student, the work being superbly done. There is no praise too high for it. No surgeon should be without it.

MANHATTAN EYE AND EAR HOSPITAL. In presenting their Twenty-Fourth Annual Report, the Directors express satisfaction with the large amount of work done during the past twelve months. There have been treated during the year 14,948 new patients, who made 63,889 visits to the daily clinics, making the daily average attendance 210.8; 13,722 days' board was furnished to 661 in-door patients; 1,898 children under 9 years of age have been treated, either at the clinics or in the wards of the hospital. A special plea is made for subscriptions toward the C. R. Agnew Memorial Fund, now amounting to \$14,571, only the interest of which can be used for the maintenance of the hospital.

LEÇONS DE CLINIQUE OBSTÉTRICALE, par Ch. Maygrier, Professeur agrégé à la Faculté de Médecine de Paris, Accoucheur de la Pitié. 200 pp., octavo. Doan, publisher, 1893.

This work is a series of lectures delivered at the Obstetrical Clinic, Rue d'Assas, during the summer of 1891, when the writer acted as substitute during this period. They are twelve in number and comprise the cases coming under observation during this time. The first four lectures are devoted to the management of labor in rachitic pelves of moderate deformity, with all the pos-

sible complications, their management, etc. Then, in the fifth lecture, he takes up the subject of rigidity of the cervix during labor, and particularly when due to syphilis. Dystocia from myofibromata of the uterus and their relation to pregnancy and labor next occupy his attention, in the sixth, seventh and ninth lectures, the prognosis of pregnancy and labor under these circumstances, its treatment, both obstetrical and surgical. The ninth and tenth deal with abnormal insertion of the placenta and the means of preventing and treating it, and the dangers of sudden death during this state. The vegetations of pregnancy and syphilis are then studied and illustrated with appropriate cases, while the final lecture takes up the management and varieties of breech presentations. The style is easy and clear, and the consideration of the various subjects concise, complete and full of instruction.

ESTUDIOS DE QUIMICA LEGAL, por F. Palau Ballesterro. 1. Ptomainas y Leucomainas. Price 4 pesetas. Madrid., 126 pp. Escuela tipografica del Hospicio.

One of the most important divisions of toxicology is that referring to that group of powerful and energetic poisons known as ptomaines and leucomaines. The work is divided into three parts: the first being devoted to the vegetable alkaloids and natural alkaloids, the second to the ptomaines or cadaveric alkaloids, and the third to the leucomaines or alkaloids formed during life. This latter section is again divided into physiological and pathological leucomaines. The first part is short and chiefly consecrated to reagents. In the second two chapters are given to the history of the subject, two more to their origin and general characteristics, when follows a table of the known ptomaines, their formulæ, names, discoverers, sources and physiological actions. Ptomaines are again treated under two headings: non-oxygenated and oxygenated ptomaines, each member of these two divisions being described in a separate chapter. The third part, devoted to leucomaines, opens with a chapter on microbiology, the microbes of fermentation and putrefaction, and pathogenic microbes, after which the history of the investigations in leucomaines and their classifications are presented, when the study of the two classes, physiological and pathological leucomaines, is taken up and each member given short consideration. It is a medico-legal work of interest, and worthy of perusal. The writer is about to issue a study of the chemistry of menstrual blood.

AN AMERICAN TEXT-BOOK OF GYNÆCOLOGY, MEDICAL AND SURGICAL, FOR PRACTITIONERS AND STUDENTS. By Henry T. Byford, M.D.; I. M. Baldy, M.D.; Edwin B. Crayer, M.D.; I. H. Ethelridge, M.D.; William Goodell, M.D.; Howard A. Kelly, M.D.; Florian Kiny, M.D.; E. E. Montgomery, M.D.; William R. Pryor, M.D.; George M. Tuttle, M.D. Edited by I. M. Baldy, M.D. With 300 Illustrations in Text and 37 Colored and Half-tone Plates. Philadelphia: W. B. Saunders, 1894.

The editor has presented an exhaustive treatment of gynæcology from an American standpoint, the country of its birth and where it has won its most brilliant triumphs and obtained the best practical results, by American authors, all of whom are recognized authority, and teachers of gynæcological surgery in leading medical schools and hospitals. Many of the most important subjects are considered from a new standpoint and are grouped together in a manner somewhat foreign to the accepted custom, but which adds much to the clearness and practical character of the teaching. We are very glad to see such prominence given to the after-treatment, without which the most skillful operations are often failures. The work is, above all, a practical one, all extraneous matter and theoretical discussions having been avoided—the authors having been wisely satisfied in presenting in a lucid manner well known facts drawn from experience and successful investigation. The typography is all that could be desired.

SOCIETY REPORTS.

THE LOUISVILLE SURGICAL SOCIETY, STATED
MEETING, NOVEMBER 13, 1893.

(Stenographically Reported by C. C. Mapes.)

DR. GEO. W. GRIFFITHS, PRESIDENT, PRO TEM, IN THE
CHAIR.

APPENDICITIS—OPERATION—RECOVERY.

Dr. A. M. Vance: This patient is Mr. B.—— upon whom I operated for appendicitis about five weeks ago, the first symptoms of the trouble having appeared six days previously. The patient was taken to the Norton Infirmary early in the morning the day after the last meeting of this society, and I opened an appendicular abscess, removing a necrotic, perforated appendix with a great many enteroliths, about a quart of very fetid pus and this piece of very much thickened and diseased omentum. He has made an uninterrupted recovery. I bring him here to-night to emphasize one point only, that is the importance of after-treatment of surgical wounds for appendicitis. I think there is a great deal of importance to be attached to the after-treatment of these wounds; the incision being made out of the median line, it is natural to suppose that a weak point will be established unless the abdomen is well supported for a long time. Pulse 120. Temp. 101°F.

EPITHELIOMA OF THE EAR—OPERATION.

Dr. W. L. Rodman: I have a little specimen here which is interesting on account of the rarity of the trouble. It is a portion of the external ear, which was removed to-day. From the history of the case it is almost certainly an epithelioma. It was found on the upper portion of the ear of a man fifty-three years of age; it had been severely painful for two years; had been removed a short time ago by a physician down town, and had recurred. It was exceedingly painful, and a distinct nodule could be felt. With the idea that it was a epithelioma—I do not see what else it could be with the history that the patient gave—I thought it prudent to remove the growth by free incision. I have not had the specimen examined microscopically, but think there is little doubt about the diagnosis. Epitheliomata in this situation are very uncommon, and I believe this is the second case I have ever seen. A peculiar feature about these cases is that they nearly always occur in men rather than in women. Men suffer eight or ten times as often as women. It is possible that this growth may have started as eczema, as epitheliomata often follow this affection. I will have the specimen examined microscopically to-morrow and make a further report at the next meeting.

LIPOMA—OPERATION.

Dr. A. M. Vance: This specimen is an ordinary lipoma, the most interesting feature connected with it being its enormous size. It was removed from the thigh of a woman fifty years of age, the tumor having been twenty years in its development. Another interesting thing to me was, heretofore whenever I have removed a lipoma of any size, I have always found a considerable blood supply. This operation was almost without hemorrhage, and the tumor does not appear to have had any blood supply. The patient has made a rapid and complete recovery.

SEMI-LUNAR CARTILAGE FROM KNEE JOINT.

Dr. James Chenoweth: I have here a small specimen which is of some interest: it is a semi-lunar cartilage from the knee joint, removed several months ago. The patient is a young man, one of our Louisville firemen, and was on a ladder with his leg lapped over a round, and by some means his leg was pushed forward in such manner as to throw this cartilage out of place. It was pushed far out, simply left attached by a small corner in front. He did not fall, but kept on at the fire and jumped out of a second story window after the cartilage had been dislocated and walked across the street. I saw him a few minutes after-

ward, and could feel the cartilage very distinctly just at the inner margin of the patella, attached at the anterior margin. Four days afterward, I opened the joint and removed the cartilage, closed the wound and it has healed without any trouble. The man has a perfectly good leg. I read a few days ago a case reported by Borck, where the same cartilage had been dislocated by a man falling backward from his horse. The cartilage was removed and the man made a perfect recovery.

URETHRA OPENING INTO RECTUM, PATIENT BORN
WITHOUT PENIS.

Dr. J. M. Mathews: I have in the last few weeks met with a unique case, I think, in some respects. A gentleman was brought to me from a Northern State, his attending physician accompanying him. The doctor said to me before I made an examination, that I would find a peculiar condition of affairs of the rectum. The patient was brought to me to be operated upon for hemorrhoids. Upon making an examination I found this gentleman, who was thirty years of age, married, his young wife accompanying him, had no penis; born without one; his testicles were large, and the urethra opened into the rectum about an inch above the sphincter muscle, consequently he had urinated through the rectum from birth. The man was suffering a great deal of pain with each action of the bowels, and with each action of the kidneys; an examination revealed quite a condition of ulceration around the entire surface of the lower border of the rectum, and defined hemorrhoids which had their attachment just beneath the opening of the urethra into the rectum. I suggested to the doctor that the patient be anesthetized in order to make a more thorough examination, and at the same time to do whatever operation we thought best; that we must take into consideration two or three things. One was that if he should be unable to make water after the operation, which is very general, it would be a very difficult matter to use a catheter, and I believe it would have been necessary to chloroform him every time it was done. In the second place, if I ligated the hemorrhoids, or cut them off, leaving a raw surface to heal by granulation, the discharge of urine over this raw surface would prevent the healing processes, and perhaps the man would be in a worse condition after the operation than he was before. Having him anesthetized I divulsed thoroughly the sphincter muscle, which I was sure would relieve the condition of congestion and ulceration; I practiced massage or the rubbing process, the hemorrhoids being the capillary or spongy variety, squeezing out their contents by rubbing them thoroughly, believing that the contraction of the sphincter would be quite sufficient perhaps to hold the hemorrhoids in the rectum. Fortunately he experienced no trouble after the operation in micturition; he could have an action of the bowels without pain; and went home in comparatively good condition. There is one feature about the case that I should mention; it may have something to do with his condition. This man for three or four weeks had had periods of exacerbation, indicating fever; he would have a chill followed by a rise of temperature to 104°F, with profuse sweats. And although after the operation the pain and general rectal condition were benefitted, perhaps cured, about the third or fourth day he had a chill, followed by elevation of temperature and sweat, so that he returned home in a rather weakened condition. The latest advice was that he had not regained his strength and was still having the periodical elevations of temperature. Whether this man is taking on a septic or uremic condition, I do not know, as the doctor did not write me fully. The case is unique in that this man was born without a penis, and the opening of the urethra was into the rectum. I have never read of such a case.

RADICAL OPERATION FOR STRANGULATED HERNIA—
FECAL FISTULA.

Dr. W. C. Dugan: I wish to report two cases of hernia operated upon last week, both of them peculiar. The first

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patient was brought to me from Indiana, with a hernia of six days' standing. It was believed that he was very much improved; he had been vomiting fecal matter, but this had ceased, but he had a hernia and it had many symptoms of strangulation. I made a free incision and removed quite a mass of gangrenous omentum and returned the stump, feeling of course, that this was the only trouble; sent the patient to his room in good condition. I saw him the next morning; he was doing well; there was no pain and he had a good night's sleep. He had no more nausea than you would expect from chloroform. The next day he was given a cathartic and his bowels moved very freely. A week after the operation, I took off the dressings and was surprised to find a fecal fistula. About a quart of very offensive semi-fluid fecal matter was discharged through the wound. Now the condition of this case was this: The doctor in his effort to reduce the hernia had succeeded in returning the enterocele. The gut was so damaged by long strangulation that a slough was the result. Fortunately it had become attached to the abdominal wall near the incision which gave vent to the intestinal contents. I will say that nothing has been done except to introduce a gauze drain and the parts washed and dressed as often as they become soiled; the fecal fistula has taken care of itself and I believe the patient will make a complete and easy recovery; he has experienced not the slightest inconvenience from it and is feeling well.

OPERATION FOR STRANGULATED HERNIA IN A "BLEEDER."

No. 2.—I operated on another patient a few days afterward with a small hernia which could not be controlled with a truss. The truss was very painful. The patient is a minister and he tells me that at times in speaking the gut is forced down and gives him great pain; being forced to stop and lie down. At the time I saw the man it was in the midst of sudden strangulation and he was very anxious to be operated upon. The operation was performed last Saturday; I saw him the next afternoon, and the young man who had been taking care of him told me that the penis was very much swollen. I went at once to see the patient and found the penis was almost as large as my forearm. The man had the appearance of having undergone a serious hemorrhage. Upon examination I found that hemorrhage had taken place in the scrotum; there was also evidence of a concealed hemorrhage as high up as the umbilicus. The dressings were removed, the lower part of the wound opened and a large amount of blood washed out; the tissues were still bleeding all along the line of the incision; bleeding freely from the skin. I concluded it was one of those rare cases of "bleeders." I made several small openings and the blood would almost burst from every wound that I made. It is the first case of the kind that I have ever encountered. I thought for some time the patient would bleed to death. The wound was thoroughly packed for two or three days, and this morning when I saw the patient I found presenting each side a peculiar gray gangrenous looking tissue organized blood clot, and removed a large quantity of broken down gangrenous material. I simply report this case as one of the "bleeders" and the other case as one of fecal fistula.

DEPRESSION OF TEMPORAL AND PARIETAL BONES THE RESULT OF INJURY—OPERATION.

Dr. W. L. Rodman: I saw one week ago to-day at one o'clock, a young man about eighteen years of age, who while working on the new Louisville and Jeffersonville bridge for the Phoenix Bridge Co., received a violent blow upon the head from a piece of scantling striking him upon the right side above the ear, knocking his head over against a post striking the other side of the head. The condition was one of mixed contusion and compression at the time I saw him; pulse seemed to be irregular, temperature sub-normal, about 96° F; respiration rather inclined to be stertorous. He could, however, be slightly

roused, by calling loudly into his ear. I removed him to the St. Joseph's Infirmary at 2:30 o'clock, and operated in the presence of Drs. Griffiths, Mathews, Wathen and others who happened to be there at the time. I found a most extensive depression of the upper portion of the temporal and lower portion of the parietal bones: I think the most extensive depression I have ever seen in my life. I trephined and cut out the depressed bone with Rongeur forceps. I found that a point of the bone had penetrated the brain; there was an escape of brain substance amounting to a considerable quantity. After making the wound thoroughly antiseptic, I closed the dura mater with catgut sutures and then applied an antiseptic dressing. The patient did very well indeed for four or five days, the symptoms of compression gradually passed away and the only serious evidence of trouble he had was that there was an occasional twitching of his face. This I think began on the fourth day; then on the fifth day he had several distinct twitchings. His mind became very much clearer; there was no paralysis at any time, except slight paresis of muscles supplied by the left facial nerve. Everything seemed to be running a perfectly normal course up to the fifth day, when there was a slight rise in temperature. The dressings were changed at that time and the wound seemed to be in every way aseptic and the scalp had healed by first intention. The next day there was a little more elevation in temperature, reaching 99½° F. Then I thought we had better submit the whole wound to a more careful examination, and open up the scalp wound, which had united throughout. This was done and there was no pus. The dressings were changed at that time again on the sixth day, and a small quantity of pus was discovered, which came from a hernia of the brain. With this exception all symptoms are favorable, though I expect death to result from hernia.

DISTENSION OF GALL BLADDER DURING TYPHOID FEVER—PROBABLE BILIARY CALCULUS— OPERATION—RECOVERY.

Dr. James S. Chenoweth: This little boy, twelve years old, was in fair health until a year and a half ago. He then complained of pain in the epigastrium. He was examined by a surgeon of this city and declared to have commencing Potts. A jacket was applied and worn for one year. For the next six months he had no treatment, but continued to have occasional attacks of pain, had no appetite and showed great disinclination to exert himself. About this time his sister was taken sick with typhoid fever, and he, occupying the same room, contracted the disease, just as she was convalescing. His attack was quite severe, the temperature ranging from 103° F. to 105° F. Delirium developed in the latter part of second week and lasted for four days. He then began to improve, and in the latter part of the third week his highest temperature was 102° F. pulse, 100. On the next day, Wednesday, he was seized with a violent pain in abdomen. His bowels had moved, and examination revealed no tumor, not much general swelling, nothing in fact to account for his pain. This was controlled by paregoric. On Friday the pain returned severely but I was out of town and did not see him until Saturday. He was then bathed in a cold sweat, temperature 105° F in mouth, pulse, 130, and very weak. In the right side of abdomen was a globular swelling which extended from the ribs to one inch below umbilicus. It was tense and fluctuating and its dullness continuous with that of liver. Two hours later I opened the abdomen by an incision 1½ inches long, over the most prominent part of tumor, which you see was above and to the right of umbilicus. This brought us down on a tongue of the liver which had been dragged down to the umbilicus by the enormously distended gall bladder. The little fellow was too weak to stand an extension of the incision below this, so a hypodermic needle was introduced directly through it into the gall bladder and enough bile and mucus removed to relieve the extreme tension. Two sutures were then put in, one at either end of incision and

a strip of gauze packed down on the needle puncture. He was then put to bed almost pulseless, although he had only been on the table three or four minutes. There was very free seepage of bile stained fluid through the needle puncture during night, with corresponding improvement in pulse and temperature. On Sunday an aspirator needle was introduced and two ounces of bile stained fluid removed. Total amount removed, one pint. On Monday, the second day after operation, a trocar was introduced through needle tract and ten ounces of fluid removed. The gall bladder was then drained for two weeks by a strip of gauze and a small rubber tube carried directly through this thinned strip of liver tissue, which was now closely adherent to the abdominal wall around my opening. Two weeks later, his fever having gradually subsided, he was seized with the same old pain, the gall bladder became again distended and his temperature went to 104° F. I had no instruments with me at this visit but being satisfied with the firmness of the adhesions at the site of the former operation, I punctured the gall bladder through these with the small blade of my pocket knife, giving exit to a large quantity of fluid. This drainage was kept up for one month, when the boy having fairly regained his strength, the wound was allowed to close, it being agreed that when the gall bladder refilled we would open it up well and remove the stone which was evidently impacted in the cystic duct. Some ten days or two weeks later the boy had a sharp attack of pain, lasting two days and accompanied by jaundice, which had never before been present. There was no distension of bladder at this time and he has been perfectly free from pain or discomfort ever since.

OPERATION FOR OBSTRUCTION OF BOWELS—PYOSALPINX—RECOVERY.

Dr. James S. Chenoweth: I have here a specimen consisting of tubes and ovaries removed last Monday. I saw the case with Mr. Fallis on the preceding Friday, the history being that there was obstruction of the bowels. It had been ten days, according to the patient's statement, since she had had an action of the bowels. There was no vomiting, except after taking purgatives, or other symptoms of acute obstruction, and some gas had been passing up to that time. The trouble had followed labor in September. An examination of the pelvis showed a tumor evidently made up of pus tubes, uterus fixed, and it was supposed at the time that the obstruction was due simply to the pain caused by having an action. She was sent to the infirmary and four high enemata given with salts, glycerine and turpentine; the water returned perfectly clear, and there was no passage of gas, showing that there was obstruction of the lower bowel. Abdominal section was made and a loop of intestine (sigmoid) was found to be bound down by a mass of adhesions, causing complete obstruction. The adhesions in every direction were very dense and extensive. The operation was very difficult and tedious, lasting over an hour. A pyosalpinx was found to exist on either side, and after separating the dense adhesions both tubes and ovaries were removed. The cavity was packed both sides with iodoform gauze, to control hemorrhage and secure drainage. This packing was removed at the end of thirty-six hours: her temperature has been normal for four days, and she has done uninterruptedly well. The case is interesting from the dense adhesions, but particularly from the obstruction of the bowels, which had been gradually developing, but which was complete at time of operation.

FATAL CASE OF APPENDICITIS.

Dr. A. M. Vance: This specimen is an appendix, result of an operation for appendicitis, and has some points of interest. The patient was a boy thirteen years of age, who had been ill for six days when I was called by Dr. Drake, of Parkland. There was every evidence of intestinal paresis; opium had been administered, and the patient's condition was so extreme that I operated as soon

as I was called. I found a large abscess sac which seemed to have been walled off. About one quart of pus was evacuated. I found three or four enteroliths, which are hard almost like calculi. The appendix was necrosed at its distal portion, but seemingly normal above. The tube was pervious. The patient lived from Thursday night until Sunday afternoon, then died, evidently from sepsis. We were unable to move the bowels at all. The enteroliths in this case were the most distinct that I have ever seen. The case rather goes to show that possibly athletic sports or great muscular efforts have something to do with the causation. I have had two cases of appendicitis recently, both giving the history of having been engaged in work requiring great muscular exertion. You will remember the patient I showed at the last meeting of this society, a baker who had been in the habit of carrying very heavy iron vessels across his abdomen, and who developed appendicitis and was operated upon with a perfect result. This boy was quite an athlete though only thirteen years old, and figured extensively in football, baseball games, etc., exercising very violently. I simply mention these facts, as they may have some bearing upon the causation of appendicitis.

Dr. A. M. Cartledge: Last week I operated upon three cases of appendicitis, with two recoveries and one death. One case was very much like the one reported by Dr. Vance to-night. A young man was operated upon on the seventh day. I thought there were firm anterior adhesions and went down in the usual way upon the tumor. As soon as I reached the peritoneum found that anterior adhesions did not exist, the tumor lay very far to the right and I was in contact with fresh peritoneum. My intention was to simply pass my fingers in gently, outlining the tumor which was in the loin, and so make my cut over the tumor in loin. In doing this owing to the thin adhesions the abscess was ruptured, freeing about a pint of pus in the general peritoneal cavity. I turned the man on his side and flushed the cavity with ten or fifteen gallons of water, removed the appendix, and packed the abscess cavity well back and to the right with gauze, with two separate strips of gauze draining through the peritoneal cavity. The patient was operated upon Tuesday. His pulse ranged from 80 to 84, temperature was never above 100° F from that time until the night of his death, which was the following Sunday night. He vomited for the first two days a greenish looking serum, indicating intestinal obstruction, taking in the meantime ten ounces of milk. The bowels never could be moved. The abdomen was perfectly flat, but there was such an amount of intestinal paresis from the existence of the trouble that peristalsis could not be induced. The pulse began to go up on Saturday; I saw him Sunday morning with a perfectly flat abdomen, but every effort to move the bowels had failed. I then took a pair of scissors and cut an opening into the colon, virtually doing a colotomy through the original incision. A large amount of feces escaped without any force from behind and very little gas, showing as I say, the absence of peristalsis. This seemed to revive him a little. I think if this patient had been operated upon sooner he might have gotten well. He never had any peritonitis, and the pulse remained almost normal for four days after the operation. In the case reported by Dr. Scott, as he says, the tumor was located just above the symphysis pubis, slightly to the right. The first symptoms were indicative of obstruction of the bowels. Dr. Scott did not believe that the trouble was appendicitis until just before the operation. A median section was done and the whole pelvis was found a mass of adhesions, the appendix had ruptured, and there was a quantity of pus in the cavity. About twenty gallons of water was used in washing out the cavity; it was then found that rupture had taken place close to the base, and the pus was probably forced back into the colon through the ruptured appendix. It is usually the case that rupture takes place near the point, but this was right at the base. The failure to obtain a movement of the bowels after operation is usually the result of intestinal paresis from one coil of the intestine ad-

hering to another. So that after relieving the condition you may lose the patient. I believe that early operation is the thing in appendicitis. Operation is demanded just as soon as the diagnosis of appendicitis is made; I see the necessity for this more and more every day, and had I known what I now know of appendicitis and insisted upon earlier operative interference, I believe that my results would have been more favorable in several cases.

Dr. W. O. Roberts: There are two points in connection with what Dr. Cartledge has said that I would like to speak to. One is rupture into the colon, or rupture near the colon, where the pus gets back into the cavity of the gut. I had a case a short while ago in which there was quite a large abscess with a gangrenous condition of the appendix. After washing out this abscess cavity thoroughly I closed the opening, and two days afterward the patient had an immense evacuation of pus from the bowels. I think there must have been a pint to a pint and a half of pure pus in the stool. There was no rupture into the peritoneal cavity in this case. Another point in the case reported by Dr. Cartledge is the paresis of the bowel: I would like to ask whether or not any one has ever tried physostigma for such a condition. In connection with *Tr. nux vomica* it has such a good effect in intestinal obstruction from fecal impaction, it *might possibly* do some good here. I have had four cases lately of obstruction of the bowel from free impaction which resisted everything excepting physostigma, given in connection with the tincture of *nux vomica*. In two of them physostigmine was given hypodermatically. In one case obstruction had lasted for a week. I was satisfied that it was fecal impaction. He had taken quite a large quantity of castor oil and had retained it for over twenty-four hours and then vomited. He had taken a number of other things and also frequent enemata had been given without any effect. I gave him physostigma and *nux vomica*, five drops each, every three hours for twelve hours, when the bowels moved freely and he got well. Another case, I saw with Dr. Block: A young girl twenty years of age, who had obstruction of the bowels, extending over a period of six days. There was considerable abdominal distension, temperature 99° F, pulse 120; she was vomiting incessantly, and there was a decided fecal odor to it. We gave her physostigmine hypodermatically in 1-100 grain injections every three hours, and after taking six doses she had a good evacuation of the bowels and recovered. I have another case under treatment now, a man who last Thursday afternoon was seized with intense pain in the left lumbar region in front and behind, his bowels being completely locked up. He had taken before I saw him large doses of Epsom salts without any relief at all. He said that he could not take castor oil, so I ordered for him two ounces of tasteless castor oil, but afterward learned that the druggist had sent castoria. I saw the patient the next morning, and as there had been no action of the bowels, I then gave him two ounces of castor oil—gave it myself to be sure that there was no mistake about it. I saw him again this morning, thirty-six hours after he had taken the castor oil, and still there had been no movement of the bowels; he had been taking some opium for the relief of pain. I then gave him physostigma and *nux vomica*; he was nauseated but did not vomit any. The abdomen became very much distended and tympanitic, pain still referable to the left lumbar region. This afternoon, after taking four doses of physostigma and *nux vomica*, he had a large evacuation, and it was reported to me to-night that he is doing very well. I got the idea of using physostigma first from Dr. Cottell, a case that I saw with him of obstruction of the bowels which had existed for five days, with intense pain, and in this case the pain was on the right side. The patient had gone along with no improvement at all, and I was inclined to operate upon him, under the impression that it was a case of appendicitis. Dr. Turner Anderson saw the case with us, and he decided that it was not a case for operation. At Dr. Cottell's suggestion we gave him physostigma in five drop doses, which had the same effect as in the other cases I have reported. It is a little peculiar

that the two drugs together should have a better effect than either taken separately.

Dr. W. C. Dugan: Dr. Scott brought out one important point, and that is the danger of a lull in the symptoms in cases of appendicitis. This is a point that has been emphasized by Abbe. That is, on the second or third day the symptoms improve, the patient suffers less pain, pulse becomes less frequent, and the high temperature may return to almost the normal. For this reason the patient is thought to be improving and operation is delayed, while it ought to be looked on with suspicion as a symptom, and oftentimes an indication for immediate operation. At this period nature in its endeavor to protect the general peritoneal cavity has thrown a wall of lymph around the appendix. This lull in the symptoms is the key note for the surgeon. If we allow this time to pass without operation, we find that on the fourth or fifth day we have an aggravation of the symptoms. In regard to the rupture that Dr. Cartledge speaks of: I am rather inclined to think that the doctor is mistaken concerning the location of the rupture. I do not believe the rupture is at the base in these spontaneous cures; I think it is at the apex rather than at the base, and the appendix in most of these cases is found pointing in the pelvis. I have found it thus in a number of cases, and the appendix attached to the bladder or to the rectum, and in these spontaneous cures I am quite sure that the rupture is at the apex or lower part of the appendix, rather than at the base or caecal end. Regarding paresis: I have seen, if I mistake not, three cases of appendicitis die about as Dr. Cartledge has described, in septic paresis. In all of them I tried the use of strychnine hypodermatically with no beneficial result. In these cases the appendicitis was what is known as the gangrenous form. In two of them the appendix was simply necrosed (death *en masse*, as it were), without an enterolith and without rupture. Why this condition should occur I am unable to say, but the whole thing was dead, and the cavity filled with a peculiar greenish colored serum, but no pus, I am very positive. I believe these cases all die. I do not believe that an operation promises much; I do not believe the hypodermatic injection of strychnia, *nux vomica* or anything else would be of benefit; they simply go on and die from the absorption of septic matter that is in the cavity. I doubt whether *nux vomica* has any effect; in the three cases I have had recently, I know that it had absolutely none.

RUPTURE OF URETHRA.

Dr. W. O. Roberts: I have recently had this case: A man while riding a bicycle fell astraddle of the wheel. This happened on Wednesday. He was unable to pass water that evening, and went to the hospital. There had been some bleeding from the urethra. His urine was drawn with catheter. He declined to remain in the hospital, and left. The next day he passed some water, but suffered considerable pain in the urethra. The second day he was unable to pass water, and Saturday he came back to the hospital to be catheterized. He went out again, and the following Sunday he came back and remained. Each time the water was drawn there was some bleeding from the urethra. A catheter was inserted into the bladder Sunday and allowed to remain three days. I saw him at that time, and the catheter was still in the bladder. Considerable water had passed out through the instrument, and he felt as though his bladder was empty. I took the catheter out, however, and there was quite a large clot of blood in the instrument, and considerable blood passed out through the urethra immediately upon withdrawal of the catheter. From the history of the case I felt satisfied that there was a rupture of the urethra, and advised an operation. It was consented to, and I operated in presence of the class; did a median operation, and after cutting through the perineum down to the urethra I found a rent in the urethra fully an inch in length and considerable extravasated blood in the perineum. Passing my finger through the rent in the urethra into the bladder, I found nearly a half pint of old blood

clots. These were washed out thoroughly, and then Harrison's tube introduced into the bladder, and the man has gotten along without a bad symptom. He is now about well.

EPITHELIOMA OF THE PENIS—AMPUTATION.

No. 2.—Another case I have previously mentioned: A man with an enormous epithelioma on the penis. It looked very much like a cauliflower. There were some small inguinal glandular enlargements. The penis was amputated close up to the pubes, and the glands on either side were dissected out. This man has also gone along without an untoward symptom, and now the stump has about healed. The wounds in the groins have entirely healed. In operating upon the groins I removed the chain of glands in both sides. I used in one groin the buried sutures, in the other the interrupted sutures, just to show the difference to the class. Where the buried sutures were used, the wounds healed without any pus or any inflammatory trouble at all. Where the interrupted suture was used, there was some little suppuration, but healing has now taken place. The enlarged glands in either groin were about as large as the first joint of my little finger. I believe there is no doubt that the growth is an epithelioma, but the specimen has not yet been examined.

TWO CASES OF STRANGULATED HERNIA—HERNIOTOMY.

Dr. W. L. Rodman: I have had quite a run of strangulated herniæ, having operated upon five or six cases within the last few weeks. The last two cases are the most interesting.

No. 1.—Three weeks ago last Saturday I saw with a practitioner in the eastern portion of the city a woman forty-seven years of age, the mother of thirteen children. She had been the subject for years of a left inguinal reducible hernia. On Friday the hernia descended, and she was unable to return it. Her family physician was sent for, who, recognizing that it was probably a strangulated hernia, requested that I be called to see the case. I saw the patient at six o'clock Saturday evening, and feeling sure that the trouble was strangulated hernia, advised early operation. This was consented to, and in operating I found a rather peculiar, and I take it unusual, condition of affairs. The hernial sac was an incomplete one; I was very much puzzled when I cut down upon it, because I could find the sac posteriorly, but not anteriorly. It is the only case of inguinal hernia that I have ever seen where there was an incomplete sac, and I would like to ask the Fellows if in their experience they have ever operated upon such a case. Of course we know that such cases do occur where the viscera are incompletely invested by peritoneum, notably the lower portion of the large gut, bladder, and in ventral herniæ. The patient made a smooth and easy recovery, never having a single bad symptom.

No. 2.—Two weeks ago I saw, with Dr. Proctor, a man forty-five years of age, who had a very large right inguinal hernia, which had become strangulated, and all efforts to reduce it had failed. I found the man vomiting, suffering intense pain, and I advised immediate operation. After freeing the sac from all attachments, which were very dense, following it well up to the neck, and making sure that all the contents had been carefully reduced, I then pulled upon the sac, twisted it upon its axis after the method of Kocher, of Berne, and threw a ligature around the sac as high up as I could; then, after cutting the sac off with scissors, I saw at once that I had cut the appendix, but I had been perfectly satisfied at the time I threw the ligature around the sac that it was completely emptied of its contents. I aimed to grasp the appendix before it had gotten out of my reach and passed up into the cavity, but failed to do so. It then became necessary to make quite an extensive incision to find the appendix which had been cut. I pulled the appendix down with the cæcum

again, and then saw why I cut the appendix. It had become adherent to the upper part of the neck of the sac, and it would have been impossible to have cut the sac as high up as it should have been cut without doing injury to the appendix. The man made an excellent recovery, never having had a bad symptom since the operation.

TRANSLATIONS, GLEANINGS, Etc.

Trional.—Collatz (*Ber. Klin. Woch.*, October 2, 1893,) has used trional as a hypnotic in sixty-six cases of various forms of insanity. In uncomplicated agrypnia, a dose of 1g. usually suffices to ensure within an hour a sleep lasting from six to nine hours. In some cases of epilepsy trional had no effect on the frequency or severity of the fits, but it shortened the post-epileptic delirium. In paralytic dementia it was uncertain and was best given in 1g. doses, two or three times a day. It was useful in a case of morphino-mania. As regards dose, 2g. has almost a certain effect when given for the first time, and if the use is extended, 1g. usually suffices. It should be given with some warm drink to ensure its being dissolved. The author records the case of an epileptic, aged 28, who took 8g. with suicidal intent. In fifteen minutes he had a fit. When he became conscious he complained of nausea, but could not vomit. He then slept for twelve hours, the pulse and breathing being normal. Next day he also slept, with slight intermissions. There was retention of urine; neither albumen, sugar, nor blood pigment was present, but ferri perchloride gave a red coloration. The next day he was well with the exception of a slight uncertainty of gait. The author concludes that trional is a useful hypnotic. It is not absolutely certain, but it is almost entirely free from unpleasant after-effects, and hence is well suited for long continued use. In recording the conclusions derived from extensive use of trional in the psychiatric clinic at Strassburg, Beyer (*Arch. f. Psych.* Bd. 25, H. 2,) states that unless the action of the drug be hindered by bodily pain or external disquieting circumstances, a suitable dose almost invariably produces drowsiness, quickly followed by dreamless, refreshing sleep. If the dose be correctly adjusted no unpleasant after effect ensues. Slight cumulative action may be noticed; a dose that fails the first night may have full effect when given on subsequent nights. Often a reduction in the amount given can be made without impairing the hypnotic effect, provided that the morbid symptoms have not increased in intensity. No trional habit is induced by long use of the drug, nor is its abrupt discontinuance attended with any unpleasant symptom beyond return of sleeplessness, if convalescence be not established. The size of the dose is especially important; age, sex, constitution and body weight have to be taken into account, as well as the nature of the insomnia or psychosis. As a rule, men require 0.5 to 1g. more than women. In simple insomnia or neurasthenia the dose at first should be reduced to 0.5g. for a man and 1g. for a woman; subsequently it should be reduced to 0.5g. A similar dose combined with opium is most useful in simple melancholia. In hallucinatory forms of melancholia, acute or chronic, Beyer has seen very favorable results from 1 to 2g. doses. In mania the dose required may be 3g. for men, 2g. for women. Such symptoms as drowsiness after waking, ataxy, vertigo, indicate that the dose has been too large.—*British Medical Journal*, October 28, 1893.

Papoid in Consumption.—E. A. Wood, M. D., Ex-Chairman of the Committee on Dietetics of the American Medical Association, in the August issue of the *Pittsburgh Review*, says: Knowing the power of papoid to destroy germs in ulcers and on open surfaces, I have employed it

in ozena, ulcers of the larynx, and in ulcers and cavities in phthisis pulmonalis. I have used the drug, first by insufflation, but latterly by using the glycerole of papoid by the atomizer. Since the eight months of trial I have been more and more convinced of its efficiency in the lesions named.

The treatment followed is:

First. Bromide of gold and arsenic internally, ten drops in water, before meals.

Second. Depress the tongue that the spray of papoid may thoroughly reach all parts of the larynx.

Third. Cause the patient to breathe deeply, that the drug may reach all parts of the bronchioles.

Fourth. Employ the spray for at least ten minutes at each sitting.

Fifth. Use the spray morning and evening.

If there is no ulcer the papoid can do no good used as a spray. To obtain the best results the glycerole of papoid should be diluted with an equal amount of alcohol.

When papoid is used as a digestive ferment in cases of consumption where there is debility, weak digestion, and the suspicion of congested mucous patches, the drug should not be given in concentrated form, lest it dissolve the weakened tissues. In that case incorporate the papoid with the food before it is eaten. Sometimes it is better to partially prepeptonize the food.

The Vivisection Gnat and Commercial Camel. (*Brit. Med. Jour.*)—It has before been the subject of caustic remark how readily many of those who strain at the gnat of physiological investigation swallow the camel of wholesale mutilation where either commerce, the pleasures of the table, sport, or agricultural finance require or suggest mutilation, destruction, or wholesale infliction of agonizing pains upon even the most highly organized creatures; not to speak of the wholesale agonies of rabbit-trapping in the warren for the market, or of the coursing of the hare, the hunting of the deer and the fox, and the mutilation of countless pigeons in matches, and grouse, pheasant, and partridge in battues and drives, of the wholesale poisoning of rats and other vermin by strychnine, phosphorus, and arsenic, or of the universal practice of mutilating without anesthetics—horses for draft, boars and sows, bulls and rams for the butcher, the creation of liver disease on a great commercial scale to supply the gourmand with foie gras—we notice one of the most humanitarian of papers speaking with approval of an order just given by the departmental commission, appointed recently to inquire into the plague of field mice in Scotland, for experiments to be made on a considerable scale by an eminent biologist, who has undertaken to bring about the destruction of these marauding herds by spreading an epidemic among the mice. In this case, however, everything seems to be condoned because the object for which the services of the researcher are engaged is a commercial one and in the agricultural interest, whereas if it were only to prevent suffering among mankind by discovering with accuracy methods of preventing or curing disease or the effects of disease, we might be sure that Miss Frances Power Cobbe, Bishop Barry, or the Bishop of Manchester would be heard bemoaning the wickedness or cruelty which could think it right to purchase whatever boons to mankind at the cost of pain to any member of the defenseless dumb creation. The inconsistency is sufficiently marked, but it would be hardly worth while emphasizing if it were not that it indicates the underlying fallacy of their whole argument. Which is the greater cruelty, to infect a herd of mice, to imprison thousands of rabbits for long hours with broken limbs in steel-jawed gins, to geld a herd of horses or of sheep, or to perform a physiological experiment in the laboratory, after giving proof that the object is one important to knowledge and likely to benefit mankind? Nay, the pain and suffering inflicted in any one county in this way is probably greater in a day than that inflicted in the whole physiological laboratories of Great Britain in a year. Moreover, in the one case anesthetics are never admin-

istered, in the other they are so in most cases, and if they are not so administered a special declaration and a special license is required. No declaration and no license is required when the mutilation is inflicted or the agony imposed for any commercial or agricultural purpose, or even to gratify a fastidious palate or to satisfy a peculiar aversion. As Sir William Jenner aptly put it on the occasion of the famous deputation of medical men to Mr. Cross, introduced by Mr. Ernest Hart at the Home Office in 1876, any man may catch a rat in the most cruelly devised trap, or hunt it to death with dogs, or poison it with strychnine, or destroy it as he pleases for the mere reason of dislike or fear, but if he wishes to inflict any kind of pain, however slight, with a view of deriving knowledge for the benefit of medical science and the relief of suffering, he is either forbidden altogether or permitted only to do so under a special license, and even then is held up as a malfactor by certain of the fanatical antivivisection party.

Rest in Bed.—Dr. Guy Hinsdale, in the course of a lecture on nursing in nervous diseases, particularly hysteria, describes the advantages to be derived from ordering absolute rest in bed. (*Int. Med. Mag.*) It will seem somewhat strange to those who have been accustomed to go about the house, although in a languid manner. It will be far better also for invalids who recline on sofas, and yet have not cared to relinquish all opportunity of seeing friends and hearing of the outer world. By going to bed in earnest and under no pretext walking about the room—not even sitting up, and in some cases not even feeding herself—the patient realizes that a new era has begun in her life history. The result is that she appreciates highly the opportunity to feed herself when the permission is given, perhaps after a fortnight or more of denial. At the end of a month or so she sits up for a few minutes each day; the time is lightened; at the end of two months perhaps she is allowed to sit in a chair. Every added privilege is appreciated as never before. Liberty never seemed such a boon. It is like the hunger of a convalescent from typhoid fever. The whole aim in life, if you have managed the case successfully, is now to occupy a sphere that before seemed impossible to attain, and with timely assurance you will have the satisfaction of seeing the patient launched upon the world made over anew. These are matters of actual experience. It may result in the most extraordinary cure of those who had been given up as hopeless invalids.

Chloroform in Labor.—Dr. Eldridge C. Price, says: If the pains are very sharp, I generally give chloroform, but only enough to take off the sharp edge of the pain, and not for one moment to produce insensibility. I call for a tumbler that is as wide at the top, or perfectly cylindrical if I can get it; if that cannot be obtained, a mug. Take a fine sponge or an old handkerchief, or a small napkin, or a piece of muslin rag, that will fill the glass nearly half full, pour about half a teaspoonful of chloroform on the cloth, and as soon as the pain comes on, hold the glass, inverted, about half an inch from the patient's nose; as soon as the pain passes off, invert the tumbler on a marble-top stand or on a dinner plate, which prevents the evaporation of the chloroform but retains the vapor, so that it will smell stronger when you take it up again than when you put it down.

As soon as the pain returns again, use the chloroform as before. Add more chloroform when necessary. If I wish to produce insensibility, I put an extra quantity of chloroform in the glass and let the patient inhale without interruption until unconscious. When used only during the pain the patient does not become unconscious, but can scarcely get done thanking you for the relief.

I have never known the least unpleasant symptoms to occur from giving chloroform in this manner; but if profound insensibility is induced, is very apt to arrest the pains for from half an hour to an hour.

MISCELLANY.

—Every tenth adult in Paris is said to be a morphine habitue.

—Very correct photographs have been taken of the interior of the bladder through the cystoscope.

—St. Luke's Hospital, Detroit, will receive \$200,000 as a bequest from the late Samuel B. Coyle, of that city.

—Excessive vomiting is easily controlled by administering one-half to one drop of oil of cloves in a little water.

—The extensive use of iodoform in the treatment of old people is not advisable, as it is very liable to produce delirium.

—Great Britain refuses to longer recognize the diplomas of the dental departments of Harvard and of the University of Michigan.

—Dew has a preference for some colors. While a yellow board attracts dew, a red or black one beside it will be perfectly dry.

—The Belgian Academy of Medicine has offered a prize of 4,000 francs for the best essay upon the pathology and treatment of epilepsy.

—Cholera germs in contact with the rind of oranges or lemons die in twenty-four hours; in contact with the cut surface they die in a few hours.

—Bloom has given atropine in thirty cases of uterine hemorrhage, and in not one did the drug fail. He gave gr. 1-100, every three or four hours.

—Japan is adopting the practice of cremation. There were, in Tokio, during 1892, 16,424 bodies cremated out of a population of about 1,000,000.

—Dr. Sarah Post recommends that vaginal douches be not employed in the treatment of unmarried women, as they are likely to excite sexual orgasm.

—The investigations of Drs. Abbott and McCormick, of the Johns Hopkins University, show that a solution containing seven per cent. of acetic acid is more effective as a germicide than bichloride of mercury.

—Prof. Hare says that if boils, when beginning in a small pustule or papule, with an inflamed zone, are painted over with collodion they will be aborted.

—The following is a broad rule; dropsy of the feet alone means heart, dropsy of the belly alone means liver, and dropsy of all the body means kidneys.

—There is an association of physicians and surgeons in Philadelphia, organized for the purpose of showing courtesies and attentions to visiting physicians.

—Sir Donald A. Smith, Chancellor of McGill University, has donated \$100,000 to endow the chair of pathology and public hygiene in this famous Canadian institution.

—Prof. Keen says that a good point to bear in mind in diagnosing a case of chancre is that you will never find chancres on the walls of the vagina, as they always appear on its outlet.

—Three deaths have lately occurred among the younger members of the medical profession of Paris in the performance of their medical duties; two from diphtheria and one from typhoid fever.

—Platinum at a white heat will consume any quantity of tobacco smoke, and keep the atmosphere perfectly clear. Lamps with a little plate of platinum over the flame are used for this purpose, but a platinum wire suspended over a gas-jet is much cheaper, and really does its work better.

—Dr. Albert Brubaker says that spasmodic croup in children, coming on suddenly at night, is often due to impaired digestion, brought on by eating some heavy food just before retiring. If the stomach in these cases be emptied by an emetic, it will be found that the croup will also disappear.

—The *Boston Medical Journal* says that a house in that city contains five full generations: the great-great grandfather and mother, both over 90 but well and active; the great-grandmother and her husband; the grandmother and her husband; the mother and father and the daughter nearly two years old.

—There is a movement on foot in France which contemplates the pensioning of the widows of doctors who die during an epidemic while engaged in their professional duties. The widows of army officers who die on the battlefield receive compensation, and it is proposed to place doctors on the same footing as soldiers in that respect.

—A thirteen-year old matron of Roxbury, Connecticut, has given birth to triplets—one boy and two girls—weighing in all twenty-three pounds. The age of the father is sixteen years. The mother is robust and developed beyond the average of girls of her age. She is the daughter of a farmer and her husband is a farm-hand.

—A short time before Dr. Charcot died, he said in a lecture that semi-scientists had for more than fifty years ridiculed the idea that the full of the moon was a dangerous time for mad people. Better-informed men are coming back to that old-time notion, said Dr. Charcot, as the result of increased learning on the subject of earth tides similar to the oscillation of sea tides.

—Syringes whose canals have become obstructed so that a fine wire cannot be drawn through, are cleaned by holding them a moment over a flame; the foreign substance is thus quickly destroyed and driven off. If a wire has been rusted into the needle it should be dipped in oil before holding over the flame. To remove the rust from the interior of the canula, it is well to pass oil through the canula, then heat it, then rinse it out with alcohol.

—The commission appointed by the *London Lancet* to investigate the question of anesthetics from a clinical standpoint, in their report say that they think that by exercising greater care in administration, the death-rate for both ether and chloroform would be diminished. In general surgery in temperate climates, they consider ether the safest anesthetic. Chloroform they consider comparatively safe when given by thoroughly competent persons. Nitrous-oxide gas should be used for minor and dental surgery.

—Last year much joy was given to the Parisians by a man with a musical anus. This year medicine supplies the curiosity. At the close of the Congress for the advancement of science the members of the section of medicine had a banquet. At dessert the "venerable Dr. Schiff, of Geneva, who presided," entertained the company by playing the "Marseillaise" with abductor muscles of his feet. Strong rhythmic contractions produced a sound audible for two or three metres. He is said to be the only possessor of this accomplishment in society, which however, does not prevent him from being a gallant gentleman and a scholar.

—Dr. T. Hayward Hayes, a graduate of the Maryland University and a few years ago a struggling drug clerk in Baltimore, is now, although still a young man, Surgeon General of the Siamese army and physician to the household of the king. He is also at the head of large educational institutions, which he has modeled after prominent schools of learning in Baltimore, is in charge of all the hospitals, and moreover, frequently preaches to the native and foreign residents, being an accredited minister of the Presbyterian church. He receives from the king a salary of \$7,000 a year and perquisites, and turns over a part of these emoluments to the mission board.